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MAY/98

Mac ADDICT 21

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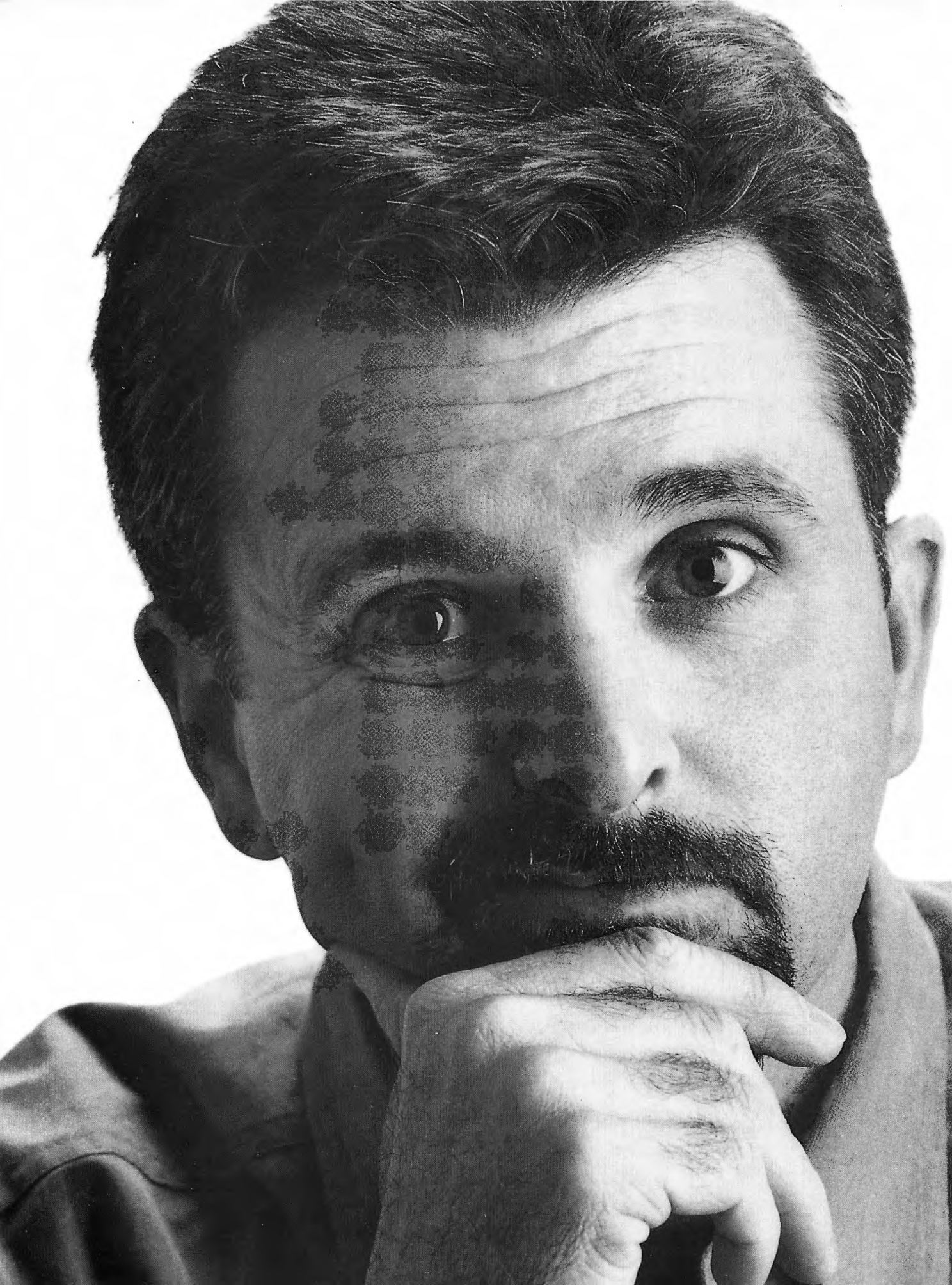


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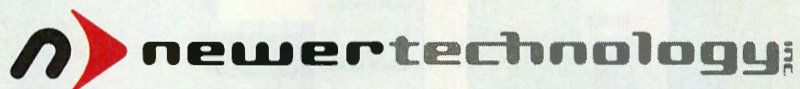
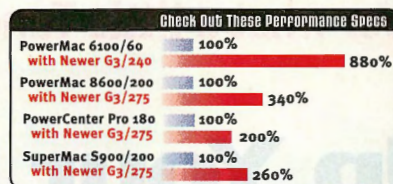
In a perfect world, we all would buy a new, top-of-the-line Mac right now. Of course, there's that little thing called money, the stuff most of us don't have coming out of our ears. That's why you need a Newer Technology MAXpowr G3 processor upgrade card. They're easy to install and save you thousands of dollars compared to buying a whole new system.

Newer Technology makes processor upgrade cards for almost every Power Mac and are adding

more machines to the list with faster processor speeds as you read this. With a MAXpowr G3 card, you'll have a faster processor with a much faster

cache. In fact, the MAXpowr G3 card can make your old Mac one of the fastest desktop computers available even compared to Apple's new screaming G3 machines. Thanks to

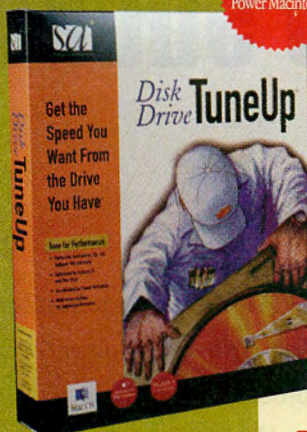
Newer Technology, your older, slower Power Mac has new life which makes waiting for a brand new machine a lot less painful.



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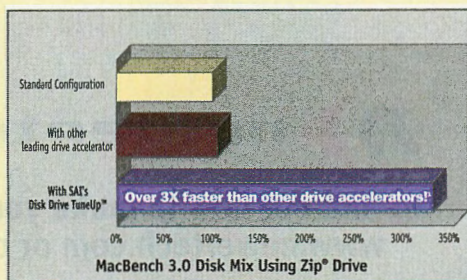
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¹ Ziff Davis, MacBench® 3.0 scores using as Iomega® Zip® drive on an Apple Macintosh Performa 6400/180 running Mac OS 8.0 with 24 MB RAM and VM on. All products used in this test were shipping versions available to the general public. This test and its results were not verified by Ziff Davis. Individual gains depend on the type of media used, caching parameters established and system specifics.

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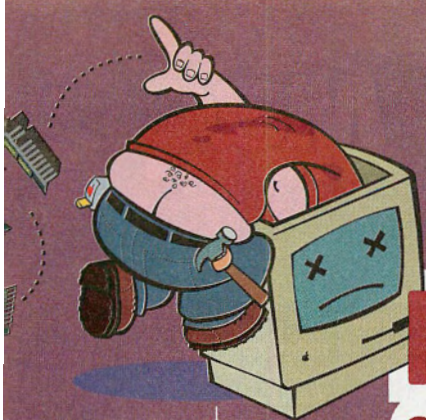
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MAY 1998

highlights

22 **Become a Mac Handyman**

Tackle those Mac-improvement projects—they aren't as difficult as you think. Learn how to install your own RAM, processor card upgrades, and PCI cards. And if something's wrong with your Mac, we tell you how to fix it. **BY DAVID REYNOLDS**

28 **AppleScript Boot Camp**

All right, recruits! Line up and learn how to use AppleScript. Follow our five-step tutorial, and you'll be barking orders to your Mac just like a drill sergeant. The best part is, you can make it ask, "How high?" **BY BRIAN SHIN**

34 **This Old Mac**

Take your PowerBook 100 off the shelf and upgrade it into an email reader, note keeper, and game player. **BY T. KELLEY BOYLAN**

how to

60 **Switch to HFS+**

Make the move to the new Mac OS Extended format and save tons of hard drive space! It's the refreshing way to reformat.

64 **Know It All about Finder Views**

Set up the Finder's window views to make things easy on yourself, instead of spending a lot of time looking for files and applications.

68 **Avoid Stupid Webmaster Mistakes**

Steer clear of the top Web-design traps and beat the pros. If you don't learn from others' mistakes, you're doomed to repeat them!



Turn this blank window into a one-stop Mac automation shop.

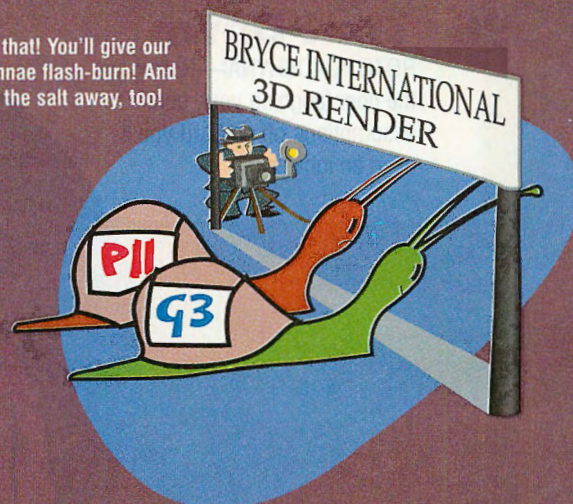


What's on this PowerBook? More important, what's *in* this PowerBook?

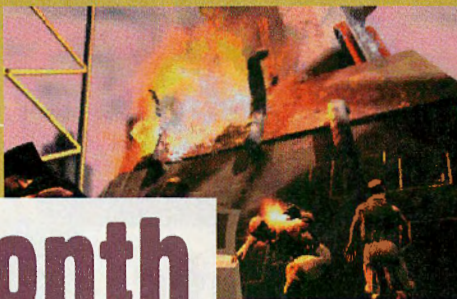


Our crazy, self-diagnosing handy Mac was created by Tom White. Computer photo by Ken Bousquet.

Stop that! You'll give our antennae flash-burn! And keep the salt away, too!



We hate to ruin it for you, but the Titanic sinks. And Leonardo bites it.



every month

10 Editor's Note

No more Newton—is this a Good Thing?

12 Letters

Chris Wang-Iverson makes a guest appearance—with a screwdriver. Plus, more on Max's clothing choices, and a special note about the eight-ball on every Funny Mac gearshift.

14 Get Info

Rob Capps narrowly avoids a breakdown while pitting the PowerPC G3 against the Pentium II. Plus: Details of a 1,000MHz screamer, the Software Publisher's Association digs at Microsoft, and Newton! Newton!

20 Cravings

When you see these five amazing products, you'll pull out your credit card so fast it'll melt!

38 Reviews

We have 'em, and we're telling you all about 'em: Dreamweaver, Elastic Reality, Internet Explorer, the Picasso 540 with 3D Overdrive, Shattered Steel, Claris Home Page, Racing Days R, and more!

58 PowerPlay

Remember Intellivision? It's baaack, it's legal, and it's on the Mac. Plus, two great add-ons for Quake, and see what digital media editor Wade Albright isn't afraid to take out of an Orc's hands.

72 Ask Us

MacAddict's tech wizards labor long and hard to answer your questions. Find out why a scratch disk has nothing to do with an itch, and learn how to make multiple hard drives appear as a single partition.

96 Shut Down

ROTFLYUAOSHYNAL—Rolling on the floor laughing your, uuh, assumptions off so hard you'll need an inhaler.

Ouch! Ouch! Hey, that hurts! Stop it!
Ouch! Watch the jewels!



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ADDICT
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These days, many AOL users are finding themselves S.O.L.

EarthLink Network
TotalAccess software
is included on
the enclosed
CD-Rom

AOL: America Off Line?

Even though AOL is by far the largest online service, it now costs more and continues to be among the least accessible. The fact is, many subscribers still wait to get on AOL far longer and more often than with other providers.

Access, of course, is everything. And if you're looking to AOL to provide it, you're *?!# out of luck. With EarthLink, you'll find that we're up 99.9% of the time. You also won't be burdened with the annoying busy signals and disconnects AOL is famous for (nor their high prices: we're still \$19.95 a month). And because we have more local access numbers than any other Internet Service Provider, you can also get on the Net more easily. Speaking of easily, that's how you can get in touch with us. Our phone number is cleverly listed below. Talk to you soon.

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the disc

highlights

Pixelpalooza98

While Kathy spent Valentine's Day killing things, others spent the holiday in more gentle pursuits. February 14 marked the end of the Iconfactory's Pixelpalooza98 icon contest. We've got the winners' icon collections on The Disc. Software:Graphics & Sound:Pixelpalooza '98

Monitors & Picasso

You don't need VillageTronic's Mac Picasso 540 card (see review, p. 46) to use the company's Monitors replacement. Use the software on The Disc to try out the control panel. Most options are disabled, but you can see the heart of the program. Software:Configuration:Monitors & Picasso 1.5.2!

Shark! Shark!

Read all about Intellivision Lives in this month's PowerPlay (p. 58), then pop in The Disc for an EXCLUSIVE MacAddict demo. Software:Fun & Games:Intellivision Lives Demo

Win Symantec's Visual Café for Java

If you're good enough, smart enough, and gosh darn it, just plain likeable, you could snag a copy of Symantec's Visual Café for Java: Professional Developer Edition! As with the Get Info contest (see p. 18), we're delaying the February contest results until next month. MacAddict Tour:Index:Contest

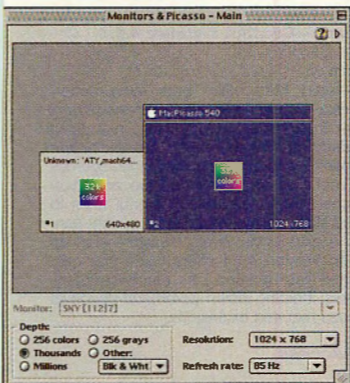
goodies

From Apple

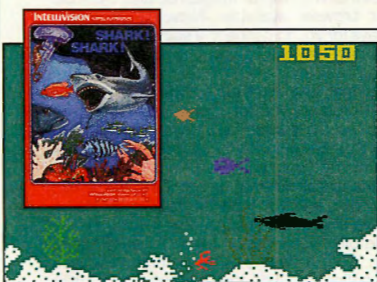
Apple Spec Database, Apple System Profiler, AppleShare IP 5.0.3 Update, Disk Copy 6.1.3, DOS Compatibility SW Update, Location Manager, Mac OS 8.1 updater, Mac OS 8.1 Disk Tools Images, Mac OS Runtime for Java, Password Security 1.0.6, PB ZoomedVideo Update 1.3, PC Compatibility SW Update, Personal Web Sharing, QuickDraw 3D 1.5.3



CHECK OUT ICON COLLECTIONS from Matthew Kelleigh (MacTown), Brian Brasher (Donut Shop), Andrew Payne (Polaroids), Dave Brasgalla (Solar Patrol), Igarashi Susumu (Mozco), Todd Kennedy (Robot), Albie Wong (WannaBe), Eleonora Galli (Lovely), and more!



YOU'LL NEED to hand-install the software. Drag the Monitors & Picasso icon to your Control Panels folder, and the VillageTronic folder to your Preferences folder (both inside your System Folder). Restart, and check out this nifty Monitors replacement!



PLAY THE FISH-EAT-FISH GAME of Shark! Shark! Watch out for the evil shark, who will turn on you in an instant. But wait, there's more! In addition to the game, this demo provides development history and other liner notes.



THIS IS HOW the puzzle should look when solved. Think you can do it?



KATHY WON THIS ultrapowerful Trow in Bungie's Saint Valentine's Day Massacre Myth tournament. Watch the stunning reenactment of the final round in this month's staff video. MacAddict21:YASV.mov



WHENEVER you see this icon in the magazine, pop in The Disc for a special treat.

every month

Software



Communication

FreePPP 2.6, Internet Explorer 4.0, Netscape, OTTool 1.0, SpeedShare Demo 1.0.3, Synchronize Demo 3.5.6, Synchronize Pro Demo 3.5.6, Tcl Plugin 2.0



Compress & Translate

Stuffit Expander 4.5, Stuffit Lite 3.6



Configuration

Conflict Catcher Demo 4.1.1, Monitors & Picasso 1.5.2, SCSIProbe 4.3, Wish I Were 2.0



Development

Codewarrior Lite, Home Page Trial 3.0, InstallerMaker 4.6, Memory Mapper 1.4.1, ResEdit 2.1.3, Tcl-Tk 8.0p2



Disk & File

CacheSaver 1.0.2, Disinfectant 3.7.1, Disk Charmer 3.1.1, DiskTracker 1.1.2, File Buddy 4.3.2, MacOS Extended Calc 1.0, MacSlack 1.0.1, Techtool 1.1.6



Education

Arthur's Birthday Demo



Fun & Games

Deadlock Demo, Intellivision Lives Demo, Racing Days R DEMO, Shattered Steel Demo



Graphics & Sound

Acrobat Reader 3.01, Clixsounds, Pixelpalooza '98, ReBirth RB-338 Demo, Sound Sculptor II 2.3.1



Information

Apple Memory Guide, ComicBase Demo 3, Easy Errors 1.2, Extension Overload Demo 2.5, Gauge Series, GURU 2.6, InformINIT 7.6.1, Troubleshooting 101 IA



Text Processing

BBEdit Lite 4.1



Updaters

Conflict Catcher 4.1.1 Update, Emailer2.0v3UpdateFolder, Iomega Installer 5.5.1, Myth 1.2 Updater, Surf Express 1.1.1 Updater



User Interface

8Tuner 3.0.5, Clay Startupscreens Vol.1, CopyPaste 4.1, OS8 Toolkit 2.06, Pretty Scroll 1.0.6, Smart Scroll 3.2

Our Disc Sponsors

To find immediate information from our sponsors, go to the Index (option-click any help screen). Or you can wait until you see a message from them in the lower right-hand corner of the main screen. Clicking on the message causes a TV screen to slide down from the top of the page, showcasing more information. You also can access sponsor information from the main window in the Finder.

Bungie—Myth

800-295-0060

<http://www.bungie.com>

Myth is a tactical-level game of epic battle set in a fantasy world. A multimetric game, Myth gives gamers unprecedented freedom to view the terrain and their forces, orbiting around the field or zooming in for a close-up. Mastery of formations and disciplined movement of armies are critical to success. Myth features cross-platform networking, while Bungie's MetaServer system makes Internet play simple. The game includes maps designed for networking, as well as alternate networking scenarios like the split-second action of Steal the Bacon and the brutal melee of Last Man on the Hill.

Casady and Greene—Conflict Catcher 4.1.1

800-359-4264

<http://www.casadyg.com>

The number one-rated Mac utility gets even better! Capitalize on Conflict Catcher's powerful management capabilities and new Internet technology. Hot Links direct you to the manufacturer's Web pages via Netscape Navigator and Microsoft Explorer. Go straight to the sources for information on your files and download the latest versions. Conflict Catcher 4 also provides powerful tools to manage plug-ins and filters as well as all fonts, control panels, start-up files, and extensions. Avoid disaster—start up with Conflict Catcher! Version 4.1.1 offers these changes: repairs some corrupted files; updated links, reference library, and Mac OS 8.1 sets; holding down command-period at start-up will not bypass required extensions.

EarthLink—TotalAccess

800-395-8425

<http://www.earthlink.net>

EarthLink Network has received consistently high marks as the nation's best Internet service provider, based on quality of service and tech support. EarthLink membership includes unlimited Internet access; unlimited email; a free personalized start page that you can customize with local weather, stock information, news, and sports scores; Web support; and all your favorite links.

You also get a free 6MB of Web space; a free subscription to bLink, EarthLink's helpful magazine; and the most popular Internet browser available—Netscape Navigator. There are two ways for you to connect: a standard 3-day trial or a special 14-day trial with a low-rate subscription to MacAddict.

For the 3-day trial, just install the software and enter all the information it prompts you for, including a credit card number. You can test the service for 3 days; after that, you will be billed for \$19.95—unless you cancel. This includes full service and unlimited connect time.

The 14-day trial is a bit different. Subscribe to MacAddict at a special low price, and you'll get 14 days to check out EarthLink. If you've already got a subscription and you take advantage of this offer, you'll get an extra 12 issues added to your account. What a deal! \$19.95 a month gives you unlimited time online and all the goodies you'd ever want. And with two great trial plans available, you've got nothing to lose.

MacSoft—Deadlock

800-229-2714

<http://www.wizworks.com/macsoft>

Only one race will survive. Time is short. Seven alien races struggle to build their empires, but only one will dominate. In Deadlock, every decision you make determines the ultimate fate of your people, your empire, and your survival. This is the incredible strategy of interplanetary conquest.

Power On—Action Files

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<http://www.poweronsw.com>

Action Files from Power On Software may be the most powerful productivity utility you can buy. It provides the easiest and fastest way to manage and organize files. All the power and control you need is contained in a custom menu bar, inserted into every application's Open and Save windows. You can expand the menu bar to show vital file information, and it allows one-click sorting by name, date, kind, and more. Additionally, a powerful search engine enables you to locate files by a multitude of criteria from within the application itself. Designate files and folders as favorites and navigate back to them with a single click, or use the automatic rebound feature to return to any location. This is the ultimate replacement for Super Boomerang users and is compatible with Mac OS 7.5 through 8.1.

highlights

Follow the Money!

Tune in on April 15 for the nitty-gritty details of Apple's second fiscal quarter. Will the Jobs magic beat the second-quarter jinx? And did you know this is the two-year anniversary of the MacAddict Web site?

Hug That Tree!

Sick of yellow and orange? We'll adopt a more natural look for Earth Day. Coincidentally, April 22 is also the scheduled date of Apple's annual shareholder meeting (as of this writing). Will there be fireworks?

Hi, Mom!

Just in case you need a reminder, we'll redecorate again for May 10. All these make-overs get exhausting, but Mother's Day is worth it, right?

See What Develops!

Apple always keeps something up its sleeve for its annual Worldwide Developers Conference. Come May 11, we'll see what we have to Rhapsodize about.



Welcome to MacAddict
You're at the online home of the award-winning magazine for Mac enthusiasts. Why not sign up for your free trial issue?

Some readers have observed that our new look home page made it hard to see what's new, so we're testing a different design for a day or two. Better? Worse? Tell us what you think at www.macsurfer.com.

Thursday, March 5, 1998

The MacAddict Network
At last, the MacAddict Web site network has its own home page! Check it out for daily highlights from the Network member sites. And coming up very, very soon: A newsgroup!

News: News on questions, theories and protests
News: News in retrospect
News: Pick of the Week: Monogator

New Releases	Beta Watch
Thursday 30.0	Apple Network Architecture 9.0.1
Apple Memory Guide 1.0	PowerMac 2.0.1
Editor 1.0	London 1998 5.0.1
MacVista 1.2	Golden 1.3.3
MacDev 1.1	Demotest 2.0 Beta

Mr. Gates goes to Washington
Does the general sit in Congress? Does he report on Microsoft's stock? What are you? Now check out Microsoft's



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Wade's liner notes on the MacAddict CD-ROM, late-breaking info, and disc replacement forms.

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You know us, right? Well, this is our funky Web site, updated daily with fresh fun and games. Come out and play!

<http://www.evangelist.macadict.com>



Evangelist is the official home of Guy Kawasaki's mailing list, bastion of Mac advocacy and scourge of the infidel.

<http://www.maccentral.com>



Every day, MacCentral will stuff you to the gills with hot news, product announcements, and nifty special reports.

<http://www.macsurfer.com>



MacSurfer's Headline News constantly scours the Web for all the news that's fit to link on Apple and the Mac universe.

<http://www.versiontracker.com>



VersionTracker's up-to-the-minute listings keep tabs on every Mac software product that's new, improved, or in bleeding-edge beta form.

<http://www.imgmagazine.com>



Inside Mac Games is a monthly magazine on CD-ROM devoted to Mac games, with its own news-packed Web site.

<http://www.iconfactory.com>



Iconfactory turns your drab desktop into a pixelated paradise with its fabulous selection of handcrafted icons.

<http://www.everymac.com>



EveryMac's exhaustive catalog of Macs and Mac compatibles provides complete specs and technical data (even on the semilegendary Outbound notebooks!).

<http://www.saracen.com/applejedi.html>



AppleJedi is the tub-thumping e-zine for evangelists, developers, solutions providers, and Defenders of the OS.

<http://www.practicalmac.com>



The Practical Mac offers step-by-step guides, troubleshooting tips, and a reference for all that Mac tech trivia.



editor's note

Is the Newton really dead, and does it matter?

After several years of halfhearted support, Apple finally decided to do something about the Newton. Apple will continue to sell its current stock of the devices, but development on the Newton OS is no more—unless some enterprising company buys the technology and keeps working on it.

I have mixed feelings about the Newton's demise. I tried several MessagePads (a 120, a 130, and the 2000) on a few different occasions, but I never could warm up to the things. Though they boast nifty features (especially the MessagePad 2000), I always came back to a notepad, pen, and pocket calendar—lightweight and cheap, and I wouldn't be out hundreds of dollars if I dropped them in an El Niño mud puddle. The eMate, on the other hand, captured my heart—and my work habits—right away.

With its built-in keyboard, durability, and great scaled-down word processor, it was everything I was looking for in a laptop. It even sports a handle for easy carrying. On a recent week-long trip, my eMate was my laptop, and I didn't miss my PowerBook a whit. I still drool at the thought of the MessagePad 2000's internals inside an eMate case. Now *that* would be a laptop killer.

It's a good thing

From a business standpoint, Apple needed to get rid of Newton. Job one right now at Apple is focus—on the Mac OS and on profit. Moving the talented Newton engineers to Mac OS development benefits the Mac. By halting spending on a third operating system (and the associated hardware), Apple moves back into permanent black that much faster.

It's a bad thing

The Newton's demise is going to hurt several groups of people. Vertical-market professionals (such as doctors) use the Newton for charting and as a reference. Newton-software

developers are left out in the cold, once again, by Apple's change in plans. Users—especially those who just purchased a Newton or eMate—are feeling a little burned. And, perhaps most troubling, educators and schools who purchased eMates as the next big thing are suddenly left holding the bag. Apple needs the education market and has said as much; the eMate's passing certainly won't endear the company to any school that recently purchased a bunch of the devices.

Yes, it matters

The Newton MessagePad, while it was not exactly a commercial success, pushed the

envelope on what a computer is perceived to be, with handwriting recognition, long battery life, portability, and instant booting. The Newton proved that a capable and usable OS could be made nearly bulletproof. I have never lost data as a result of a Newton OS crash. Finally, the Newton was cool. It had a certain futuristic mystique that ordinary computers just don't have.

Apple has promised a Mac OS-based replacement for the eMate in 1999. Let's hope that the company learns the lessons of the Newton and incorporates great design and ease of use.

—David Reynolds



Newton Passion Runs Deep

I recently posted an editorial on the MacAddict Web site and was deluged with email from loyal Newton fans. Here's a sampling of that commentary (which ran about nine to one favoring the "You're an idiot" camp).

For starters, in the medical market, the Newton is a very important computer. It provides a way for me to take tomes of medical information with me on medical rounds, including a drug database, several medical textbooks, and a client to an electronic medical record. Unlike a laptop, the Newton provides a large amount of inexpensive memory, with battery life measured in weeks instead of hours, which makes it particularly useful in the medical domain. (Some 300 apps were written for physicians.) My colleagues and I are disappointed by the loss of this ingenious platform.

—STEVEN E. LABKOFF, M.D.

I know you're already catching hell for this article. Did you really hate the Newton that much? I understand Apple's need to focus, but the decision to discontinue the MP was unnecessary. The way I see it, the MP was a trailblazer. Other companies (3Com, PalmPilot) capitalized on the MP's flaws and made their mark on the PDA scene, but the MP was truly unique. The Pilot is just a scaled-back copy of the MP, and

Windoze CE is a lame attempt to make a lame OS portable. Even with its flaws, the MP filled a wide variety of niches and should be applauded, not ridiculed, for what it has done for the PDA market.

—ROBERT BALDWIN

Regardless of the business perspective, the death of the Newton is incredibly disappointing from a technology standpoint. I have used the Newton since the MP100, and I can say it is the only computer I use that almost never crashes. In five years, I have not once lost data on a Newton. How many operating systems can you say that of—including the Mac's?

Ironically, Apple stuck with the technology, from the problem-ridden MP100 that *Doonesbury* ridiculed, to today's MP2100 and eMate 300 versions—which everyone loved—and now the company kills it. —FRED MARTIN

Finally, somebody that makes sense! I read some negative notices about an article of yours while I was browsing through comp.sys.newton.misc, so I decided to look at the article myself. I agree with you 100 percent. The MessagePad's form factor and price are absurdly impractical, and there's no market for a would-be laptop that's too heavy and costly to be a PDA! —JIM

I still drool at the thought of the MessagePad 2000's internals inside an eMate case.

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letters

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This Month

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GET ON, GET ACTIVE. Talk to us and to other Mac addicts at the Web site.

LICK IT—IT TASTES GOOD

I have been a subscriber of *MacAddict* for about a year now. You people have, without a doubt, the best magazine on the market. I especially like the Bookmark that you include with every issue. I just have one question: What is that round, silver thing inside the Bookmark for?—ERIC GAMBLE

GET A BLOOD TEST

Yesterday I decided, with some trepidation, to blow out the dust bunnies from their large warren deep inside my Mac. Unimpressed with the performance of the compressed air can, I switched to good ol' lung power! I also drooled into one of my occupied RAM slots. I quickly switched back to the air can and dried it out—it works fine! But is it possible that the DNA from my saliva fused with my 7200/90's CPU? I ask because now it intermittently calls me "Daddy" and insists on having a bedtime story read to it when I put it to sleep.—JIM COSBY

VOTE EARLY, VOTE OFTEN

A little girl named Nikki has reportedly been feeding chocolate to a dog. She probably doesn't know this could poison the dog. If she does know this, then we are dealing with evil. Either way, she should be stopped, the dog should be neutered, and I don't know about dolphins.—ELBERT WALL

Please see our "Who's More Evil" contest on p. 16 to cast your vote.



AV/98

Will You Write Us THEN, TOO?

That's it, I've had it. I picked up my copy of *MacAddict* today and headed for the quiet of the bathroom to peruse the offerings for March (this is the only place no one bothers me). I started reading the letters, and before I knew it my legs fell asleep. I couldn't get off the seat! Since I was stuck there anyway, I read the rest of the magazine. Once finished, I threw myself to the floor and dragged myself to the computer to plead with you, *please* don't print this magazine anymore or else the same thing will happen next month.—BILL AVANT

Will It Open A POWERBOOK?

The number thing in my name thing is getting out of control. I write that letter in and soon the whole world is reminding me of it. And then this Fred Preller is taunting me, too. Why, that just makes me angry. But no. I said to myself I wasn't going to blow up on you guys. I'm not. I'm *not going to freaking blow up!* I mean, what's the point of blowing up? Why, only about 20 or 30 people walk up to

me and show me the magazine with my letter in it! Some of the people I don't even know!

You'll pay for this, don't think you won't pay. I have a *very* large screwdriver with all you *MacAddict* people's names on it. It's *very* big.—CHRIS WANG-IVERSON

BUREAU GROTESQUE

I *must* know the font you guys use on the cover of your magazine every month. No matter how hard I look for it in my Adobe catalogs, I can *never* find it! I figured if anyone could help me, it would be you guys. To be more specific, it's the font used on your February issue's cover that spells out "Special Issue: Graphics!" (among other things).—CLAYTON MILLER

THE MAYOR WOULD LIKE TO SPEAK WITH YOU

Could you please put this letter in your magazine? Puleese...pretty please with sprinkles on top? And sugar, too. I really love your magazine, and I want to brag to my friends and family that I got my letter published. I'll be a hero! So please put this dumb letter in your magazine so something exciting will happen in my dull little town. Thank you.—HAILEY DOBIAS

D'OH! WE GOOFED

In your article on the Power Mac 6100 you have listed some incorrect information. You write that you can install RAM "one or two SIMMs" at a time. Being an Apple authorized service technician and the former owner of a 6100, I can attest that you have to install RAM into the 6100 in pairs, and they must be the same size.—TIMOTHY S. WILSON

You evil, evil people. You called the 6100 an old computer. This is almost enough to send a Mac user over the edge. I may just replace the entire cast of *Riverdance* with a giant, man-eating Spam monster and invite them to perform in the lobby of *MacAddict*. That shall be your punishment.—EDWARD "6100" VALENZUELA

UHH...WHAT HE SAID

As the creation myth for the American national

(Establishment) religion, neo-Darwinian evolution is full of wonder and inspiration. But because it is bad science, it's very difficult to do correct simulations based on it and still have them come out credibly. So it comes as no surprise that (as reported by Kathy Tafel, Mar/98, p68) the Galapagos game bears no resemblance to real Darwinism, but appears more like a Lamarckian vitalism. But then the finches on the real Galapagos islands are also making rather a mess of the approved dogma by recently "evolving" to be more like the mainland finches they supposedly evolved away from.—TOM PITTMAN

THINK PROFIT

Whoa—I just had a crazy idea. Steve Jobs for president. Actually, it's not that crazy. I mean, if he can help Apple post a \$45 million profit, just think what he could do for that deficit of ours.—SCOTT WEISGERBER

A Chumbawamba "drinking" song played in the background when Steve Jobs announced Apple's \$40 million profit. Good choice of tunes, Steve. The symbolism is perfect. Chumbawamba fans are rebels just like the Macheads!—JASON GALLANT

HE'S JUST A DRAWING!

Personally, I never thought of Max as being naked. You would have to have a warped mind to

even think he was. But I thought the shorts on Max at the bottom of the "Shoppers Paradise" in the March '98 issue was a good touch.—BILL RICKS

So we have been enlightened to the fact that Max is bald and yes, even lacking clothes. But I noticed a more disturbing trend. It seems Max is not potty trained! Just look at the mess he made on the front cover of the February '98 issue! Do something, please (such as give me a G3 and I will overlook the whole thing).—KEVIN SELKOWITZ

RACE YOU FOR PINK SLIPS

Out of curiosity, why is it that all of the "Nitro-burning Funny Macs" (Mar/98, p28) have an eight-ball connected to a stick shift? At least I think it looks like a stick shift. Do they have this to give you some way to tell if going right or left is correct? "Tell me, oh magic eight-ball, should I take the right turn?" "Sorry, ask again later." Is that all it is, or is it supposed to have some subliminal meaning that will cause all the people reading this to become MacAddicts? Sorry, I've just watched the movie *The Game* and my brains are still turned into a paranoid bread pudding.—DANIEL WOLFE

Come on! Everyone knows that a Camaro or Firebird blows the doors off of the 'Stang!

Besides...the name 1997 PowerMac RamAir 9600/300 Firebird is so much more fitting. Look at a new RamAir Firebird or Camaro Z28 and tell me those don't have more class than a Ford.—MARK BUCHHOLZ

WE VOTED FOR CHOCOLATE

TOP SEVEN REACTIONS TO BILL GATES'S GETTING HIT BY A PIE:

1. Possibility that Microsoft will buy the worldwide rights to cream pie and declare it an integral component of Windows 98.
2. Possibility that Microsoft won't buy worldwide rights to cream pie, but will buy worldwide rights to pie tins and charge a licensing fee to use them to make cream pie and all other types of pies and tarts.
3. Apple pie would make much more sense.
4. Incident may make Bill distant, cold, and self-absorbed.
5. MSNBC has difficulty in reporting the story in a way that makes Bill look good. Not to worry—they'll find a way.
6. Threat that Microsoft will buy Belgium, outlaw pie in that country, and declare that Belgium is an integral component of Windows 98.
7. Why waste a perfectly good pie?
—BEN KILBURN

I'LL NEVER BE ABLE TO
END AND CHANGE THOSE FILES
BEFORE RENO
GETS HERE!!

I WOULDN'T WORRY BILL, WITH
ACTION FILES I CAN SEARCH,
SORT, COPY, RENAME AND DELETE
FILES FROM ANY PROGRAM'S OPEN
AND SAVE WINDOW. I CAN EVEN
RESIZE THE WINDOW!!

WHAT ABOUT FAST
ACCESS TO MY FAVORITE
ANTITRUST FILES?

JUST A 'CLICK' ADDS THEM TO
A PERMANENT LIST SO
THEY'RE ALWAYS
HANDY FOR AN
EMERGENCY!

WELL, DID YOU
FIND THEM?

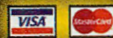
SORRY BILL,
CAN'T DO THAT
ON THIS
"WINDOW"
MACHINE
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IS MAC ONLY!

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All this plus SPA watchdogs and 1000MHz chips!

Benchmarks Byte

This time there can be only, uh...two.

MacADDICTbench

Growing tired of the same old computer testing, we here at MacAddict have developed several of our own highly specialized, patented, and now officially industry-approved benchmarks.

Mac-Only Application Mark*

Time spent completing the following application tasks (faster is better)

Racing Days R: one lap completed in first race of first level

G3: 58.2 seconds

Pentium II: still trying

BBEdit: one-page global search and replace for the letter 7

G3: 0.01 seconds

Pentium II: still trying

Mac OS 8 Start-up

G3: 39.43 seconds

Pentium II: still trying

*The Pentium II was unable to execute PowerPC instructions.

One of these days, Norton Mark*

Symantec Norton Utilities System Info

G3: 591

Pentium II: 157.2

*longer bars are better

*These numbers have absolutely nothing to do with one another.

Marky Mark

Feed online editor Mark Simmons a processor and he spits out a score. Amazing!

G3: 85 and a gold star ★

604e: 54.1

603e: C+

601: 12 π

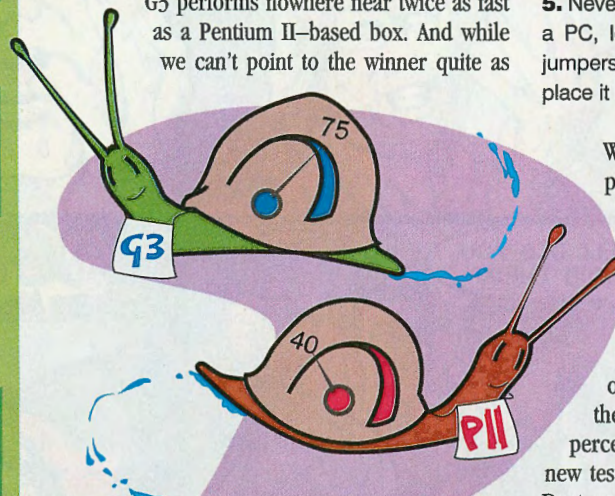
Pentium II: 77.001

Pentium Pro: 11.554

Apple's great new snail commercial—anyone who's seen how big an actual Pentium II is lives in fear of that giant snail—shows the PowerPC G3 pummeling the Pentium II in runs of BYTEMark, *Byte* magazine's CPU test. In the commercial, the G3's score is double the Pentium's, implying that the current Power Mac G3's blow the hard-to-remove doors off the newest Pentiums. We got so excited, we ran some tests of our own and made a realization: oh yeah, benchmarks are a load of crap.

The BYTEMark spits out some impressive numbers, but a bunch of sterile *Byte* workers running algorithms through a CPU means as much to computer users as the disco music that Intel bunnies prefer. By the time the processor hits an actual desktop, things have changed: applications have been optimized, and bus speeds and operating systems come into play.

Inspired by the commercial, we spent some time comparing Apples and Wintels running real applications. Our tests show that the Power Mac G3 performs nowhere near twice as fast as a Pentium II-based box. And while we can't point to the winner quite as



QUAKE SCREEN-REFRESH RATES

G3: 75 to 85 frames per second (Mac Quake)

Pentium II: 40 to 50 frames per second (Quake 1.6)

BRYCE INTERNATIONAL 3D RENDER

BRYCE 3D RENDER

G3: 23 minutes, 22 seconds

Pentium II: 23 minutes, 40 seconds

definitely as the BYTEMarks do, here are a few things we can confidently say:

1. Running benchmarks is a slow, painful process, and every test you can think of can be easily refuted.
2. Windows sucks (OK, we already knew that, but working with that OS for a week is a hell of a reminder).
3. G3 Macs are cool (see above parenthetical).
4. The Pentium II 333 and the 266MHz G3 generally tie in Photoshop and Bryce 3D tests.
5. Never take the G3's hard drive out, plug it into a PC, load it with Linux, manually switch the jumpers, and expect it to run fine when you place it back in the Mac.

We started our tests with the popular, processor-chomping Adobe Photoshop. In our original review of the G3 Macs (3/98, p54), we tested several computers with a 17-function Photoshop run consisting of filters, image sizes, mode changes, and image selections. Our 266MHz G3 completed the test in 1 minute and 40 seconds. An NEC Direction SPL 333 completed the test in 1 minute and 25 seconds—18 percent faster than the G3. Then we made up a new test of Photoshop filters only (Radial Blurs, Dust and Scratches, and so on). In this test the 266MHz G3 beat the same NEC by almost 19 percent, finishing in 7 minutes, 45 seconds to the NEC's 9 minutes, 23 seconds.

Affordable Portables

Apple to produce new line of computers
based on the Mac OS

About this time next year, you should be able to get your hands on a slick, slick mobile machine. There hasn't been a formal announcement, but we make several inferences from statements Apple executives made on the demise of the Newton (see "Newton Nixed"). At the very least, we know from the press release that "Apple is committed to affordable mobile computing, pioneered by the eMate, and will be serving this market with Mac OS-based products beginning in 1999."

Reading between the lines, this means Apple will make an eMate-like device that runs the Mac OS. The design of the eMate was a big hit—its clamshell curves hid a built-in keyboard and facing touch screen. The machine is durable enough to withstand getting dropped, yet winsome enough that we couldn't keep our hands off the little guy. It's this kind of "wow factor" that Phil Schiller, Apple's VP of Marketing, says will be built into every new piece of hardware Apple makes.

However, the eMate is a Newton-based machine, and Apple is no longer making Newton technology. Instead, the new device will run the Mac OS, which implies a couple of



Look for this eMac next year. Well, something close to this artist's conception, anyway.

things: first of all, Schiller said that Apple "is not interested in splitting the Mac OS code base," hinting that Apple will *not* make a "lite" version of the Mac OS, as Microsoft has with Windows CE. That means that just about every Mac application should run on the device. Also, the Newton ran on Digital's StrongARM processor, which Digital licensed to Intel. It's virtually guaranteed that the new machine will run on PowerPC, since that's what powers the Mac OS.

Ultimately, though, we won't know all the product details until Apple chooses to release them. In another year or so, sigh.—KT

OK, so Photoshop is a wash. How about another processor-intensive program? After careful consideration, we decided MetaCreations' Bryce 3D (which comes on a hybrid

CD) is nearly equal on both platforms.

So how about a nice juicy render? We ran two different renders, both of which were sure to take a significant amount of time. Our first render took 23 minutes and 22 seconds on the G3—pretty good for a full-screen, antialiased render. And on the Pentium? Twenty-three minutes, 40 seconds—a whopping 18 seconds slower. An even larger render—30 minutes or so—again proved the G3 mere seconds faster than the NEC.

PHOTOSHOP ACTIONS

VARIED ACTIONS

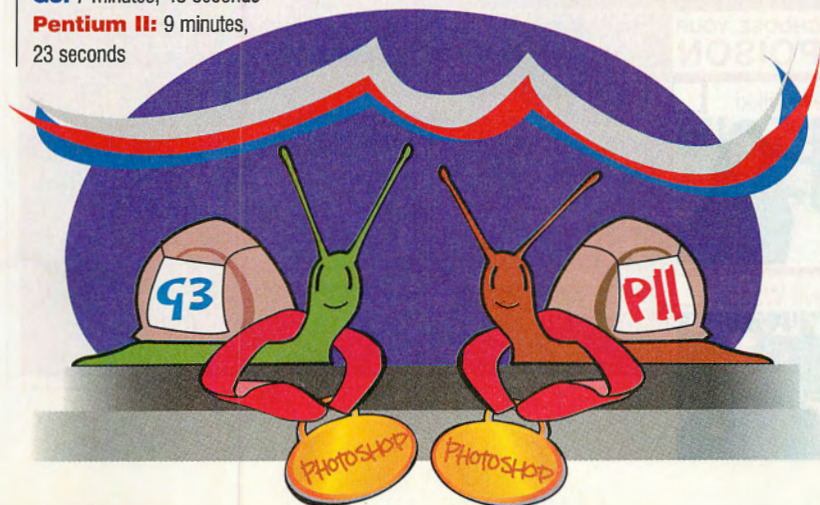
Pentium II: 1 minute, 25 seconds

G3: 1 minute, 40 seconds

FILTERS ONLY

G3: 7 minutes, 45 seconds

Pentium II: 9 minutes,
23 seconds



Newton Nixed

Newton loyalists are understandably upset that Apple has stopped all Newton development. The Newton OS pioneered mobile technology and, in its last incarnation in the MP2100, set the standard for handwriting recognition, Internet connectivity, and audio integration. With a unique data soup memory, the Newton was immediately on as soon as you flicked its switch—no minutes of boot-up as with the Mac. Many wonder why Apple didn't sell the technology or try to find a way to recoup the millions of dollars it had invested in the division.

The answer is that not only does Apple not want to spend more money on an unprofitable division, but the company doesn't want the Newton, in any incarnation, competing with the Mac OS. Apple wants everybody—its customers, and, most important, its developers—to focus on the Mac OS. For the first time in almost two years, we are hearing Apple executives talk about growing the company from the \$6-to-\$7-billion business it is today into a "much higher level," instead of merely stanching the flow of red ink. If killing the Newton will get Apple to that level, we're all for it.

The only test in which we saw a real difference between machines was the last and final test—Quake. By pressing the ~ key while Quake is running and typing "timerefresh," you can make Quake stop, spin around the room, and produce a frames-per-second refresh rate. Quake on the Mac popped up numbers in the 75-to-85-fps range. Quake 1.6 on the PC produced numbers in the 40-to-50-fps range. Who knows what the heck this means, however, considering these are different versions on totally different systems.

Don't feel too distraught over the meaningless numbers. We wasted hours trying to turn on the NEC before we realized—intuitively enough—that you have to open and close the CD-ROM drive immediately after Windows boots. And don't ask about the time we spent randomly reseating the Pentium II processor to get the NEC to recognize its own hard disk. When you take that into account, the G3 won some tests by days.—RC

get info

Compete, Shmompete

SPA bites the hand that feeds it

The Software Publisher's Association's attention is now focused on a better agenda than producing the bogus market-share numbers MDJ first publicized (<http://www.gcsf.com>). It's spent more than two months polling members and constructing a list of Competition Principles. While the document never mentions the SPA's largest member by name, the list of eight principles clearly targets Microsoft as the "owner of a commercially available dominant operating system." The entire document is available at the SPA Web site at <http://www.spa.org/gvmnt/tos/compprinciples.htm>, but we've condensed it and interpreted it here for you.

1. Microsoft should innovate. For some reason, the SPA thinks that a software developer should have the consumer in mind when writing software. Go figure.
2. Microsoft should not reserve secret operating system calls for its own application programs.

3. Microsoft shouldn't integrate its own application software into its operating system unless it lets other application vendors do the same thing.
4. Microsoft shouldn't tie the price of the OS license to the price of its application software when negotiating bundle deals with hardware vendors.
5. Microsoft shouldn't buy up retail space just to prevent its competitors from getting shelf space.
6. Installing Microsoft applications shouldn't disable other software. For instance, installing a Web browser shouldn't cripple any other browsers you happen to have installed.
7. Microsoft shouldn't use Windows 95 and Internet Explorer to promote its own content over that of others.
8. Microsoft shouldn't announce products that don't exist in the hopes of preventing a competitor from grabbing a market.



Amazingly enough, the SPA isn't even offering these principles as a code of conduct for the software industry. Rather, the organization wants the government to use these guidelines when regulating the industry, or ruling in the antitrust lawsuit brought against Microsoft. Even more astounding is that Microsoft pays the most dues of any member to the SPA. We hope they think they're getting their money's worth!—KT

Better Support from Iomega

Barring legal wierdnesses, come this spring you should be getting better support for your Iomega Zip, Jaz, or Ditto drive—provided you bought it between July 16, 1994, and September 1, 1997, that is. As part of a class-action lawsuit settlement, Iomega will upgrade its free support services. The company will still charge for technical calls, but you'll be able to get a lot more information via the Web and automated phone calls. The Web site will include tutorial pages as well as a database containing answers to frequently asked questions. The phone system will offer the same information, and you'll be able to talk to real live human beings who'll tell you whether you need to pay to talk to a support technician. Look for more at <http://www.iomega.com> after April 3rd.—KT

Who Is More Evil?

We've been having a heated debate here in the *MacAddict* offices, and only this contest can resolve the issue. Who is more evil: Nikki Echler or Wade Albright? Now, they may look innocent, but one of the

above has perpetrated a most devilish crime. Behind one of those cherubic faces lies a mind that would, get this, deliberately cut off the heads of random strangers who ask to have vacation pictures taken with their Instamatics. The winner will be chosen randomly from the group whose votes picked the eviler of the two. Watch out: if the votes swing too heavily in favor of one candidate, the chances of being picked are much smaller. Our winner will be chosen May 30 and will get some cool *MacAddict* gear. Cast your vote at our Web site or send it to Evil Is as Evil Does, c/o *MacAddict*, 150 North Hill Drive, Brisbane, CA, 94005.—KT

CHOOSE YOUR POISON

evil Nikki



evil Wade



Your Fears Unleashed.

Your Senses Expanded.

Your Reality Altered.

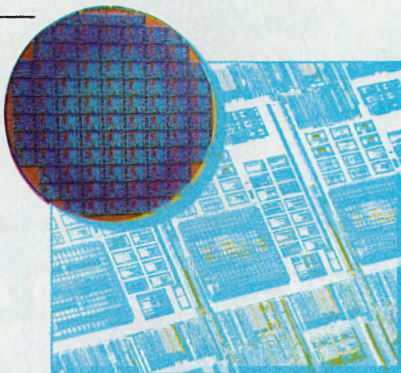
Forever...

get info

1000MHz

It will Blue you away!

Wow!!!! IBM recently fired up an experimental version of a 1GHz micro-processor that seriously blasts past anything Intel will have to offer for quite some time. This screamer uses the same technology that shrank the chips inside the 9600/350, but also adds an even more innovative cache design and combines several operations into a single unit. It will be a while before this technology shows up in your Mac—think of it as the PowerPC 2000. However, another breakthrough from the labs of IBM will indeed be coming to a Mac near you, maybe as soon as this year. Copper will replace the aluminum connections inside CPU chips. Benefits of this technology include a speed boost of up to 15 percent, cost savings of up to 15 percent, and chip-size reductions. With copper, the chip can be further miniatur-



ized to use a .20-micron manufacturing process—the PowerPC G3 uses a .25-micron, and most of the rest of the industry is still at .35-micron. (A micron is 100 times thinner than a human hair.) IBM recently demoed an experimental version of a PowerPC chip using copper technology that ran at 480MHz. At those speeds, Apple's ad folks will need to strap that Pentium II to a houseplant instead of a snail.—KT

Apple T-Shirts

AUTHOR: Gordon Thygeson **PUBLISHER:** Pomo Publishing
CONTACT: 408-253-2799; <http://www.appletshirts.com>
ISBN: 0-9661393-4-8 **PRICE:** \$39.95

Ah, nostalgia. There's nothing like looking wistfully at the past to get us hopeful about the future. *Apple T-Shirts* takes us back to the early days of both Apple and the computer industry, looking at the culture through T-shirts. More than 1,000 of the 100 percent preshrunk cotton collectibles are lovingly presented along with a short account of their place in Apple's corporate history. This book deserves the center spot on the coffee table of every Apple aficionado.—KT



Still No Winner!

To accommodate our overseas readers, we've extended the entry date for our contests through the last day of the issue's cover

date. So look for February's winner next month, March's winner in June, April's winner in July, this month's winner in August...

The MacAddict Index

Price of Windows 98 Beta 3: \$29.95

Discount toward final version of Windows 98 provided to beta customers: \$0.00

Number of years that Belgium's Noel Godin has been orchestrating pie-flinging attacks on public figures: 28

Approximate number of employees at Steve Jobs's Pixar Animation Studios: 400

Approximate number of Pixar employees whose salaries were revealed in a companywide prank email: 400

FOCUS ON: SHARE THINGS!

Apple's share of worldwide personal computer unit sales in the first fiscal quarter of 1998, according to Apple: 2.6%

Apple's share of U.S. unit sales in the first fiscal quarter of 1998, according to Apple: 3.3%

Apple's share of U.S. unit sales in the last calendar quarter of 1997, according to Dataquest: 3.4%*

Mac OS licensees' share of U.S. unit sales in the last calendar quarter of 1997, according to Dataquest: 2.0%

Apple's share of U.S. sales revenue in the retail channel during January 1997, according to PC Data: 11.9%

FOCUS ON: OUR MEAN READERS!

Number of messages MacAddict's online editor received regarding site redesign during the first 150 hours after it went live: 425

Number of these that contained negative comments about our new background color: 128

Number of these that compared it to various bodily secretions: 20

Number of these that compared it to mustard: 9

Number of these that compared it to CNET's Web site: 5

* Apple's first fiscal quarter of 1998 is roughly the same period as the last calendar quarter of 1997. (Fred, could we fix this? It's confusing.) Sources may be found at the MacAddict Web site.

—MS

Unreal™



(actual gameplay screen)

Completely original engine, ruthless AI, hyper-realistic environmental effects, portals, and an endless multiplayer universe of user created, hot linked levels...welcome to the Bermuda Triangle of the galaxy



westlake
INTERACTIVE

Coming Soon...

MacSoft®



cravings

Five fabulous finds to make you drool—they rule!

DCS 520 Digital Camera

Kodak



Digital photography is not just a hobby, it's a passion for the '90s: instant gratification and a natural connection with that Internet thing everyone's talking about. Besides, you'll never have to see that annoying little man at the one-hour photo processor. He lost some teeth in a bad solitaire accident, and he refuses to wear his bridge. Oh sure, he can whistle, but he gets little spots all over your prints when he does. Instead of facing that, turn to the Kodak DCS 520 Digital

SERIOUS PIXELS FOR SERIOUS PHOTOGRAPHERS.

Camera. This beautiful camera (based on the Canon EOS Camera subsystem) is chock-full of features. Besides sporting dual PCMCIA slots (Type I, II, and III), the DCS 520 also has a Firewire connector to make for fast downloads. That's not enough, you say? How about this: a 1728-by-1168-pixel charge-coupled device for ultrahigh resolution, 36-bit color depth, and a burst picture capability (it works like a motor drive on your typical film camera) that takes 12 pictures at 3.5 frames per second. The color LCD also includes a histogram feature, which lets you see a graphic representation of your digital art. The DCS 520 uses a removable NiCd rechargeable battery and it even comes with a battery charger. It will take someone who's serious about dig-

ital photography to afford the DCS 520, though, with its list price of \$14,995. You'll also need a PowerPC and a minimum of 64MB of RAM. Contact Kodak at 800-235-6325 or go to <http://www.kodak.com/go/professional> to show that Ansel Adams a thing or two.

DirectCD

Adaptec

Time was when you could fit everything you owned on one floppy. But that was back when you were a no-ties Mac drifter, moving from town to town, solving other people's problems. Times have changed, and you've gotten older. It's not a digital frontier now, and there's no need for a hired floppy in the new settlements. Besides, what can you really fit on a floppy these days, anyhow? You can still recapture those days with DirectCD from Adaptec, only this time using CD-R as a medium. This nifty utility lets you burn CDs as if they were disks on your desktop. To

THINK OF IT AS A REALLY BIG FLOPPY.

add some files to your CD-R disk, simply drag them onto the disk's icon, and DirectCD handles the rest. DirectCD works only with certain CD-R drives, so check Adaptec's Web site (<http://www.adaptec.com>) for a listing before you buy. Once you've done that, contact Adaptec at 408-945-8600 or 800-442-7274 and get ready to pony up \$69 for your very own copy of DirectCD.



DaynaStar FastHub 8

Dayna Communications

Speed, speed, speed! That's all you hear from those whiners who share a home network with you. It's supposed to be communal, but we know how well that worked out for the Russians. LocalTalk wasn't fast enough. Ten-megabit Ethernet wasn't fast enough. They always want more, but 100-megabit Ethernet is, well, expensive, and you're on a budget. Even if they don't think so, what with their games and big graphics applications. Now you can give them what they want (for a little while, at least) and not break your budget with the DaynaStar FastHub 8. Priced at a mere \$269 (a pittance when you think about the cost of fast Ethernet), the FastHub 8 gives you eight 100-megabit ports. Just plug it in, plug in the RJ-45 cable that connects your Macs, and off you go. You can use existing wiring, but you'll have to make sure all your Macs have fast Ethernet cards. To satisfy those who demand so much of you, contact Dayna at 801-269-7200 or surf to <http://www.dayna.com>.

PULLING SPEED OUT OF THE ETHER.

Action Files

Power On Software

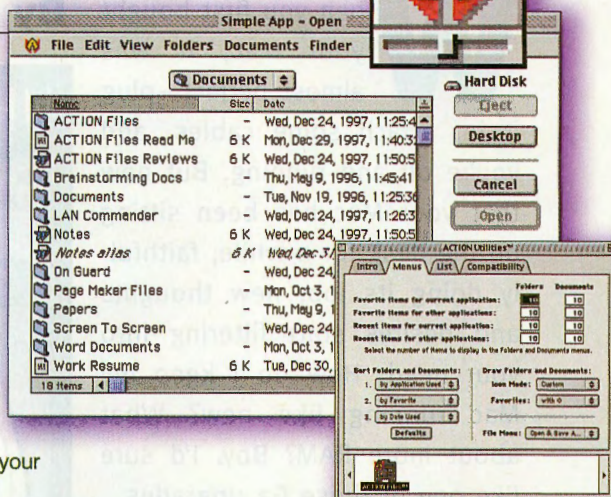
Since you received that 128GB RAID array for Christmas, you've had a

devil of a time managing your files. Oh, sure, all of that space and speed is great, but when it comes to actually finding the folder that contains your observations on slime mold and why it is just so *darned* fascinating—you're stuck. That's where Action Files comes in. With this \$49.95 utility installed, you can use the new menus that show up in the Open and Save dialog boxes to go right to the

folder you need. Action Files includes a find function that searches while you're in an Open or Save window, and you can also sort files, do a

FINALLY—FIND FILES FAST!

Get Info command, view paths, or even move or resize the Open or Save window—all without leaving said window. To finally get a handle on all of those files, contact Power On Software at 800-344-9160 or point your browser to <http://www.actionutilities.com>.



Lapdog

Shaun Jackson Design

A cute, fuzzy puppy—that's all you wanted. That's all it would have taken to make your little life complete.

Instead, you got some chicken wire in the shape of a

dog, covered with old carpeting—just like the fake monkey mothers in those psychology experiments. Well, you're an adult now, and you can make your own decisions about what a puppy is and isn't. You're also a busy professional who rides around in airplanes a lot with your PowerBook, so a puppy isn't really practical. Instead, invest \$129.95 in the Lapdog. This ingenious portable computer case doubles as a portable desk,

WARM YOUR LAP WITH THIS SMOOTH COMPANION.

with a built-in wrist rest, a spot for your cell phone, and several storage areas for batteries, drives, paper, disks, and just about anything else. These pockets flop over your lap and fold up into an attractive briefcase when you're done working and need to move. And for that occasional firefight in which you find yourself, the Lapdog is made of 1050-denier urethane ballistics nylon. That's tough. To order your Lapdog, call Shaun Jackson Design at 888-662-4300 or 313-662-2828, or go to <http://www.sjdesign.com>.





BECOME

handyman

YOUR GUIDE TO FIXING— AND FIXING UP—YOUR MAC

When you first bought your Mac, it was almost perfect—plug it in, attach some cables, and you're off and running. But now that your Mac has been sitting on the desk for a while, faithfully doing its job, new thoughts and desires start filtering into your head: How do I keep my Mac running like new? What about more RAM? Boy, I'd sure like one of those G3 upgrades.

Or perhaps you installed some beta software from a less-than-reputable source, and your Mac hasn't been quite the same since. It's crashing a lot, and you think there might be an extensions conflict, but you're not quite sure. What's more, you don't know how to find out.

What follows is a collection of tools, skills, and tricks that will bring you into the handy-Mac realm. Not only will you be able to fix your own problems and do your own upgrades, but your neighbors will be calling you to come over and help with their Macs. You'll be the most popular person on your street—not that you weren't already.

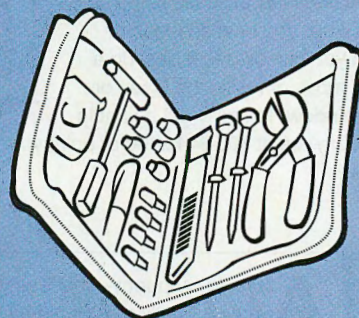


**FIND a ton
of tools on
The Disc.**

By David Reynolds

WHAT YOU'LL NEED: Pack a tool kit

Every do-it-yourselfer needs the right tools to do the job. Here's what you should have on hand when working on a Mac:



HARDWARE

- A TOOL KIT with screwdrivers, Torx wrenches, sockets with a socket wrench, and a good pair of pliers. Curtis (800-272-2366 or 319-263-8144, <http://www.esselte.com/curtis/index.html>) makes several great kits.

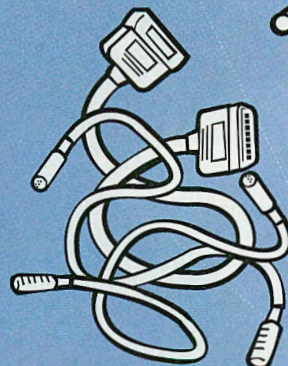
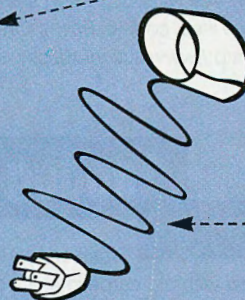
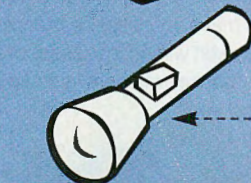
- A STATIC STRIP (wouldn't want to fry those delicate Mac innards).

- A FLASHLIGHT (hey, it's dark in some of those cases).

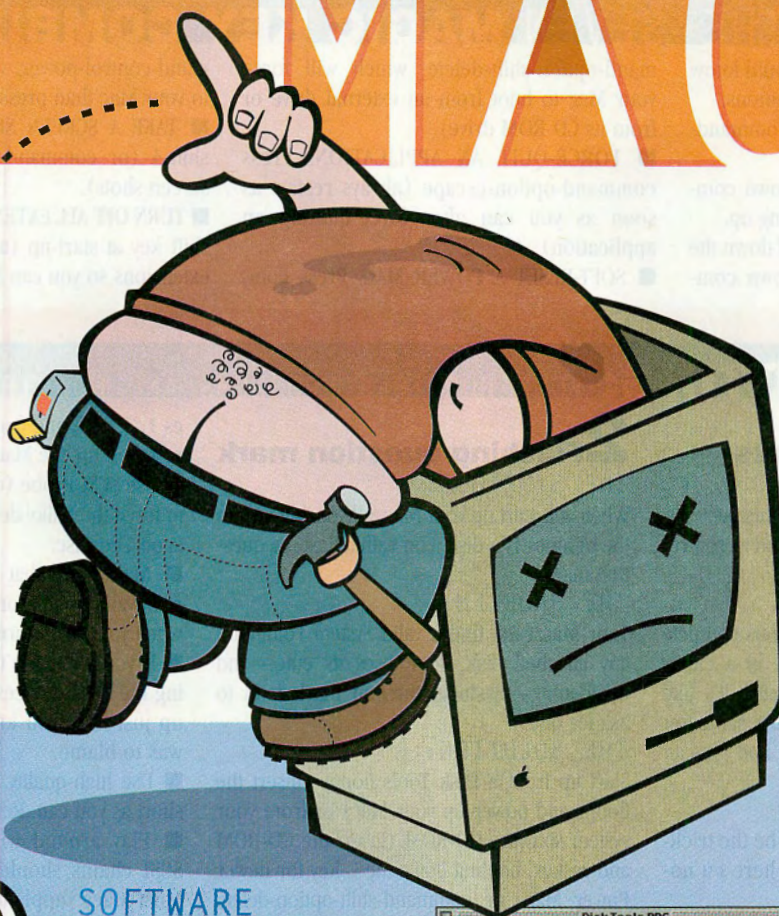
- A CAN OF COMPRESSED AIR (keeps the saliva contamination to a minimum).

- SEVERAL DIFFERENT CABLES (ADB, SCSI, and serial) as well as some SCSI terminators.

You should also have a clean, flat, nonconducting (read: not metal) work surface in a cool, dry place. In other words, don't do your work on your metal kitchen counter next to the sink.

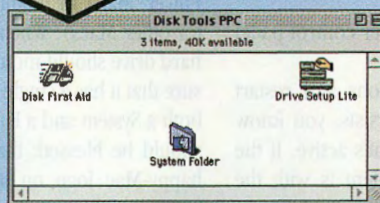


Illustrations by Adam Vanderhoof



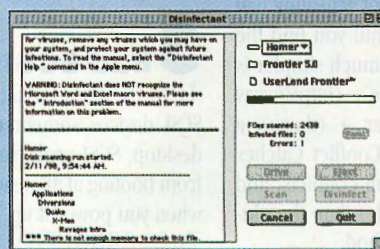
SOFTWARE

● **A DISK TOOLS FLOPPY**—You absolutely can't do without this one. Make a Disk Tools floppy with your Mac OS CD-ROM (unless your system software came on floppies, in which case you already have a Disk Tools floppy; make a copy of it and use that). This floppy will include a scaled-down System Folder, Drive Setup Lite, and Disk First Aid. These tools are enough to at least boot your Mac under most circumstances.



● **DISK-REPAIR SOFTWARE**—Although Disk First Aid does a great job of fixing problems with disks, it doesn't fix everything. To get additional tools you'll be thankful for when disaster strikes, invest in a copy of Norton Utilities (<http://www.symantec.com>). This utility set comes on a bootable CD-ROM, meaning you can start up from the CD and have access to a disk repair utility, a defragmenter, and an unerase utility. MicroMat (<http://www.micromat.com>) makes a disk utility well worth checking out.

● **ANTIVIRUS SOFTWARE**—Although there aren't many Mac viruses out there, these malicious little code snippets can still cause some trouble. Be sure to have some antivirus software ready to root out this problem. Disinfectant, a freeware antivirus program, is on The Disc. Commercial antivirus packages include Symantec Antivirus for Macintosh or Virus-Scan by Network Associates (<http://www.nai.com>). The commercial antivirus programs do more than Disinfectant does (for example, they detect and eliminate Word macro viruses), and the companies issue updated virus descriptions on a regular schedule.



● **PRAM AND DESKTOP SOFTWARE**—No toolbox is complete without MicroMat's TechTool. This nifty little freeware utility zaps the PRAM and rebuilds the desktop more completely than the Apple-supplied methods do.

● **DIAGNOSTIC SOFTWARE**—Newer Technologies (<http://www.newer-tech.com>) makes a bunch of freeware gauges (all of which are on The Disc) that look at your Mac's processor, RAM, L2 cache, SCSI, and some expansion cards. Using these programs, you can see whether your Mac's hardware is showing up properly.

● **EXTENSION AND ERROR SOFTWARE**—Sometimes all you need is information: what some bit of software does or what some error code means. For the first, use InformINIT (on The Disc), which goes into tremendous detail about each possible item in a System Folder. For the second, use a Mac error-lookup program (there are a couple on The Disc). If you have a CD burner, consider burning a bootable CD-ROM with a valid System Folder and all the troubleshooting utilities you can collect. Be sure to obey copyright laws and pay for your shareware utilities.

THE SEVEN MAGIC KEY COMBINATIONS

As a handy-Mac person, you should know these seven magic key combinations:

- **ZAP THE PRAM.** Hold down command-option-P-R right after start-up.
- **REBUILD THE DESKTOP.** Hold down command-option when your Mac is starting up.
- **START UP FROM A CD-ROM.** Hold down the C key on newer Macs (or hold down com-

mand-option-shift-delete, which will force your Mac to boot from an external drive or from its CD-ROM drive).

- **FORCE-QUIT AN APPLICATION.** Press command-option-escape (always restart as soon as you can after force-quitting an application).
- **SOFT-RESET A POWER MAC.** Press com-

mand-control-power, which is a little kinder to your Mac than pressing the reset switch.

- **TAKE A SCREEN SHOT.** Press command-shift-3 (or command-shift-4 for specialized screen shots).
- **TURN OFF ALL EXTENSIONS.** Hold down the shift key at start-up (an easy way to turn off extensions so you can look for conflicts).

TROUBLESHOOTING: FOUR HORRIBLE PROBLEMS AND HOW TO FIX THEM

1 Extension conflicts

THE SYMPTOMS:

Your Mac freezes up or crashes unexpectedly, especially after you've installed a new control panel or extension.

THE PROBLEM:

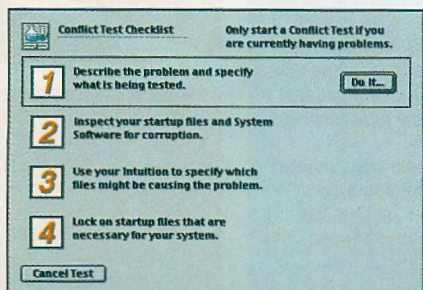
Sometimes two (or more) extensions compete for the same resources, resulting in a messy lockup of your system. Conceptually, it's like you and your sister fighting over the same toy. Pretty soon, mom or dad steps in and puts an end to all activity. Bummer.

THE SOLUTION:

Although extension conflicts can be the trickiest of problems to track down, here's a no-fail method:

- Open the Extensions Manager control panel and turn off all extensions.
- Enable half of the extensions and restart your Mac. If the problem persists, you know the problem is with the set that's active. If the problem goes away, the problem is with the inactive set. If that's the case, activate the inactive half, deactivate the active half, and restart.
- If the problem is with the active extensions set, deactivate half and restart. If the problem is still there, you know that the problem extension is in the now-smaller active set. If not, you know it's with the set you just deactivated.

Keep following this pattern of activating half of the remaining extensions until you find the culprits. One way to make this much simpler is to invest in Casady & Greene's (<http://www.casadyg.com>) Conflict Catcher 4 (there's a demo version on The Disc). Conflict Catcher automatically tests for extension conflicts, and it's far faster (and more reliable) than the old-fashioned move-it-yourself method.



2 Flashing question mark

THE SYMPTOMS:

When you start up your Mac, all you can see on the monitor is a disk icon with a flashing question mark.

THE PROBLEM:

Your Mac can't find a valid System Folder on any attached disk, so it uses its cute—and maddening—flashing question mark icon to ask for one.

THE SOLUTION:

Start up from a Disk Tools floppy (insert the floppy and power up your Mac) or from your system software CD-ROM (insert the CD-ROM and restart, holding down the C key for newer Power Macs or command-shift-option-delete for other Macs). When your Mac starts up, the hard drive should mount on the desktop. Make sure that it has a single valid System Folder with both a System and a Finder. That System Folder should be blessed: that is, it should have the happy-Mac logo on the folder. If it doesn't, open the folder, move both the System and the Finder to the root level of the hard drive, then move them back in. This should bless the folder. Then run Disk First Aid to repair any directory problems and restart your Mac. If you still get the flashing question mark when you restart, try doing a clean install of your System.

3 Bad SCSI voodoo

THE SYMPTOMS:

SCSI devices sometimes won't mount on the desktop. SCSI problems can prevent your Mac from booting at all, leaving it with a gray screen when you power it up.

THE PROBLEM:

SCSI has a lot to recommend it, but it's also notoriously finicky and difficult. Problems range from conflicting SCSI ID numbers to bad cables.

THE SOLUTION:

Here are several things you can try:

- Make sure all SCSI devices have a unique address. A Mac's internal SCSI hard drive occupies address 0, and the internal SCSI CD-ROM occupies address 3. That said, address-

es 1, 2, 4, 5, and 6 are all yours. (Address 7 is reserved for the Mac itself.)

- Use SCSI Probe (or some other SCSI utility) to force the balky device to mount. SCSI Probe is on The Disc.

- Make sure that any relevant drivers (for removable media or other SCSI devices) load when your Mac starts up.

- If your Mac isn't booting, try disconnecting the SCSI devices. If your Mac then starts up just fine, you know that a SCSI problem was to blame.

- Use high-quality cables and keep them as short as you can. Remember, thicker is better.

- Play around with SCSI termination. All SCSI chains should terminate at each end. Most Macs supply termination at the Mac end, but it's up to you (or your peripheral) to provide it at the other end.

IMPORTANT NOTE:

Always make sure that all your SCSI devices and the Mac they're connected to are powered off before you connect or disconnect anything. You run the risk of damaging your Mac's hardware if you ignore this.

4 Funky PRAM

THE SYMPTOMS:

Your Mac behaves strangely—very strangely. It won't recognize certain drives, or perhaps it can't remember the date.

THE PROBLEM:

Each Mac stores some information (the current date, the currently chosen printer, that sort of thing) in a little bit of memory called PRAM (or parameter RAM). Sometimes that information gets corrupted, or the battery keeping that memory alive goes dead.

THE SOLUTION:

There are a couple of things you can do. First, zap the PRAM using either the key combination at start-up (command-option-P-R) or TechTool (on The Disc). If the problem persists, open your Mac, remove the PRAM battery for a minute or so, reinstall the battery, and restart your Mac. If the problem is still there, take the PRAM battery into your nearest Mac-friendly shop and buy a new one.

These should be the watchwords for any handy-Mac person. If you follow a regular course of maintenance, your Mac will give you fewer troubles than if you let things get dilapidated to the point of destruction. (You'll also avoid those nasty letters from the city council asking you to clean things up.) Here is one great maintenance routine:

■ **REBUILD THE DESKTOP.** This cleans out the Finder database that keeps track of all the files on your Mac's hard drive.

WHEN: Every month, or whenever generic icons start appearing.

HOW: When you start up your Mac, hold down the command and option keys. You'll be asked if you want to rebuild the desktop. Click OK.

WHY: It cleans out the desktop database, makes your Mac run a little faster, and ensures that all the icons show up properly.

WHAT YOU SHOULD KNOW: MicroMat's TechTool is a nifty utility that deletes the desktop database file and forces the Finder to rebuild it from scratch, resulting in a more complete rebuild.

■ **USE DISK FIRST AID.** Disk First Aid looks at your hard drive's structure and repairs any problems with the way files are organized on your drive.

WHEN: Run Disk First Aid after a crash that locks up your Mac, or whenever your Mac is behaving strangely. It also doesn't hurt to run it every month just to make sure things are all right.

HOW: Start up from your Disk Tools floppy (or from another partition with a System Folder and Disk First Aid) and run Disk First Aid on the drive you want to examine. Click on the Verify button to check your hard drive, or click on the Repair button to repair any problems.

WHY: Your Mac's hard disk has a complicated structure in which it stores files. Disk First Aid checks the structure and makes sure that everything is hunky-dory.

WHAT YOU SHOULD KNOW: Other programs, such as Norton Utilities for Macintosh and MicroMat's TechTool Pro, can also check and repair disk directory problems.

■ **UPDATE YOUR HARD DISK DRIVER.** The hard disk driver controls how your Mac talks to its hard drive. It lives on the hard drive.

WHEN: Whenever a new driver is released, or when you install new system software. Apple includes one with new versions of Drive Setup. You'll have to check with your third-party drive-software vendor for updates, or you can check a Web site such as Version Tracker (<http://www.versiontracker.com>) that keeps track of updates and version numbers.

HOW: Get the new driver from the company that sold you your disk-formatting software. If it's Apple, use Drive Setup. Otherwise, check the third-party hard-drive company's Web site for updates available for download.

WHY: The hard disk driver controls how your Mac uses its hard drive. New drivers often fix bugs or add performance boosts.

WHAT YOU SHOULD KNOW: Updating the hard disk driver is potentially dangerous, because if something goes wrong, the whole drive might be hosed beyond repair. This is exceedingly rare, but it's always a good idea to back up important files before updating a driver.

■ **DEFRAGMENT YOUR HARD DRIVE.** Defragmenting your hard drive can speed it up by making sure that all files are in one piece, not spread all around.

WHEN: Defragment your drive whenever it's fragmented by more than 5 percent, or once

every couple of months. If your Mac's drive seems to be churning excessively, check to see how fragmented its files are.

HOW: Buy a defragmenting program (Norton Utilities for Macintosh comes with Speed Disk), start up from a drive that isn't being defragmented, and run the program. If you have only one drive, start up from your Disk Tools disk.

WHY: When your Mac has a slew of small files and little space left, it has to put bits of files wherever it can find space, which may break those files into several small pieces. This slows your hard drive and adds to its wear and tear. Defragmenting makes sure that all your hard drive's files are in one tidy piece.

WHAT YOU SHOULD KNOW: Defragmenting isn't something you need to do often, but it's helpful every now and then. Because defragmenting involves moving most of the files on your hard drive around, it's a good idea to choose a time when you won't need to interrupt the process, or when there isn't a big thunderstorm brewing outside.

■ **BACK UP YOUR HARD DRIVE.** When trouble strikes, you won't lose anything.

WHEN: Back up your hard drive as often as you can. If you'll only follow a once-a-week program, then do it once a week. Ask yourself: "How much data can I afford to lose?"

HOW: Use the Finder to copy your applications and documents to hard drives or removable-media drives. Make at least two backups.

WHY: Do we need to spell it out? If something goes tragically wrong, your data is safe.

WHAT YOU SHOULD KNOW: You have to back up regularly for it to do any good, and you should make at least two copies of your data in case the first backup goes bad. It's that important.

TWO MAC REPAIR PLANS

If you're having trouble with your Mac and don't know why, here are a couple of plans to help you. The first cures many general problems; the second should solve *almost* any problem.

■ **REBUILD THE DESKTOP.**

■ **CHECK THE HARD DRIVE WITH DISK FIRST AID.**

■ **CHECK FOR EXTENSION CONFLICTS BY STARTING UP WITH EXTENSIONS OFF.**

■ **SCAN FOR VIRUSES.**

■ **UPDATE HARD DISK DRIVERS.**

■ **ZAP THE PRAM.**

IF THAT DOESN'T DO THE TRICK, PERFORM THE FOLLOWING ULTIMATE CURE:

■ **BACK UP YOUR DRIVES.** Make at least two copies, and copy down your TCP/IP information.

■ **UPDATE YOUR HARD DISK DRIVERS.** This ensures you have the latest drivers, minimizing any problems older drivers may cause.

■ **ZAP THE PRAM.** This removes any corrupt PRAM settings that might be causing problems.

■ **START UP FROM YOUR SYSTEM INSTALLATION DISK.** Do a low-level format of your hard drive—and remember, now is the time to partition that drive or move to HFS+, if you like. (See "How to Switch to HFS+" on page 60 to find out how to move to HFS+.)

■ **INSTALL SYSTEM SOFTWARE.** Use the most recent version you can, from System 7.5.5 on up.

■ **REINSTALL THE ORIGINAL SOFTWARE.** Don't just copy over applications from your backup. Reinstall software from known good copies.

■ **RESTORE YOUR FILES.** Copy over all your files (and any software that you couldn't get from known good disks).

■ **RESTART YOUR MAC.** You need to set up functions such as networking and the system clock, but your Mac should run like a champ. If not, ask for a karmic adjustment.

UPGRADING

Being a Mac handyman requires more than just helping folks when there's trouble. It also means knowing how to fix up a Mac. It's something like walking into an old farmhouse and knowing how to add a six-burner Wolfe stove, knock out a wall, and put up a false distressed beam ceiling to build a kitchen that would make Wolfgang Puck envious—if he could walk in to see it.

At the very least, you should know how to install RAM, an expansion card, and a processor upgrade. These are all similar operations.

so if you learn how to do one, you'll have an inkling how to do the rest.

TIPS WHEN DIGGING AROUND IN YOUR MAC

■ **ALWAYS USE A GROUNDING STRIP.** This little strip bleeds off static electricity. Alternatively, you can always touch your power supply's metal casing while your Mac is plugged in (but *not* turned on), which will do essentially the same thing. Remember: one stray static spark can fry your whole Mac.

■ NEVER TOUCH THE MONITOR OR ITS

PARTS. If you're opening up an all-in-one Mac, don't touch the monitor. There are some rather large capacitors that can store several thousand volts of electricity even when your Mac is off, and that'll leave a mark. Avoid the monitor and all the wires that come off it.

■ **DON'T TOUCH THE SOLDER SPOTS.** Again, this can hurt your Mac by sending static electricity through the tracings or breaking the solder spots, so do your best to avoid contacting all those shiny silver spots on the logic board.

INSTALLING RAM

This is the primary hardware task you'll face as a Mac handyman. Before you go sticking your high-density chips in any sockets, though, you should know what kind of RAM belongs in your Mac. Over the years, as the Mac has changed, several types of RAM have emerged for use in Macs. To get the right RAM in your Mac, you need to know:

■ WHAT KIND OF RAM CHIPS (SIMM, DIMM) YOU NEED:

■ HOW MANY PINS (30, 72, 168) ARE ON EACH RAM CARD:

■ **WHAT FLAVOR OF RAM (DRAM, SGRAM) YOU NEED:**

■ WHAT SPEED (MEASURED IN NANoseconds) YOU NEED:

■ WHETHER RAM CARDS CAN BE INSTALLED SINGLY, OR WHETHER THEY HAVE TO BE INSTALLED IN PAIRS.

Answer these questions, and you'll get the right kind of RAM. You can find RAM information for just about any Mac by consulting the Apple Spec Database, the Apple Memory

Guide, or by using Newer Technologies' GURU application. All are included on The Disc.

Once you have the RAM in hand, you need to put it in. Here are some pointers:

■ **AVOID STATIC ELECTRICITY.** A single small spark can fry a RAM card. This is a bad thing. Likewise, avoid touching the RAM card's pins, which increases your chances for trouble.

■ **CLEAN OUT THE DUST BUNNIES WITH COMPRESSED AIR.** Don't blow into your Mac. If a stray saliva bubble lands in a vacant RAM slot, well, you have problems.

■ **PUSH THE RAM IN FIRMLY.** You don't want to break your logic board, but RAM cards require some force to make sure they seat properly. Push them until they clunk into place. If you're pushing firmly and the RAM doesn't want to go in, make sure you're not putting it in backward or in the wrong slot.

■ **INSTALL THE RAM IN PAIRS, IF POSSIBLE.** Some Macs benefit from memory interleaving if RAM cards of the same size and speed are installed in pairs (for example, installing one

80ns 16MB DIMM in slot A4 and one in slot B4 in a Power Macintosh 9500). Interleaving gives your Mac an extra speed boost, but not all Macs have the capability. Check Newer's GURU to see if yours does.

Once you've installed the RAM, power up your Mac and select About This Computer from the Apple menu in the Finder. If the RAM doesn't show up, don't panic. Instead, try opening up your Mac again, pulling the chips out and reinserting them, or putting them in different RAM slots. If it still doesn't show up, call the tech-support line for the company that sold you your RAM.

HOT TIP:

Installing specialized kinds of RAM, such as Level 2 cache or VRAM, is essentially the same as installing regular RAM. Treat these RAM cards as you would any other RAM cards: avoid touching the pins, keep them away from static electricity, and push them firmly into their slots on the motherboard.

INSTALLING A NUBUS/PCI/PDS CARD

Since the Mac II, most Macs have shipped with some sort of expansion card slot, which came in a few different flavors: a Processor Direct Slot (PDS), a set of NuBus slots, or a set of PCI slots. Newer Macs use the PCI slot, but there are still plenty of NuBus-based Macs (and NuBus cards) around. There are even some PDS cards to be had in used-hardware circles. So what are they for? These expansion slots are used to add things like expanded video capabilities, Ethernet, audio capabilities, or even processor upgrades. To find out what kind of expansion slots (if any) your Mac has, consult the Apple Spec Database (which is, of course, on The Disc).

Installing an expansion card is pretty easy.

Once you have the card you want to install, open up your Mac's case. Insert the card firmly into the proper slot until it clicks into place. You may need to rock the card back and forth slightly until it slips in. To install any card with input/output ports, such as a new video card or Ethernet card, you need to pull out a metal strip that blocks the port on the Mac's case.

Next, find the reset switch on your Mac's motherboard. This switch, which looks like a plastic disk the size of a pencil eraser in the middle of a metal square, makes sure that your Mac sees the new card; unfortunately, it also zaps the PRAM, which means

you'll have to reset some of your Mac's settings. Finally, put everything back together and power up your Mac. Install the driver software (if there is any), and you should be in business.

Apple Spec Database		Apple Processor and Graphics Family										Macintosh Hardware Specifications	
Logic Board		Processor and Graphics										Memory	
Model	Processor Speed	FPU(s)	Cache(s)	Cache Size	Cache Type	Cache Config	Cache Config	Cache Config	Cache Config	Cache Config	Cache Config	Cache Config	Cache Config
Power Macintosh 6900G50	600	250 MHz	Integrated	100 Kbytes	5448	64B	14B	64B	64B	64B	64B	64B	64B
Power Macintosh 6900G50	600	200 MHz	Integrated	100 Kbytes	5448	64B	14B	64B	64B	64B	64B	64B	64B
Power Macintosh 6900G50	600	150 MHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	120 MHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	100 MHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	75 MHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	50 MHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	25 MHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	10 MHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	5 MHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	2.5 MHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	1.25 MHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	625 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	312.5 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	156.25 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	78.125 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	39.0625 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	19.53125 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	9.765625 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	4.8828125 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	2.44140625 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	1.220703125 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	610.3515625 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	305.17578125 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	152.587890625 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	76.2939453125 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	38.14697265625 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	19.073486328125 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	9.5367431640625 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	4.76837158203125 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	2.384185791015625 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	1.1920928955078125 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	596.04644775390625 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	298.023223876953125 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	149.0116119384765625 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	74.50580596923828125 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	37.252902984619140625 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	18.6264514923095703125 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	9.31322574615478515625 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	4.656612873077392578125 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	2.3283064365386962890625 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	1.16415321826934814453125 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	582.076609134674072265625 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	291.0383045673370361328125 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	145.51915228366851806640625 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	72.759576141834259033203125 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	36.3797880709171295166015625 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	18.18989403545856475830078125 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	9.094947017729282379150390625 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	4.5474735088646411895751953125 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	2.27373675443232059478759765625 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	1.136868377216160297393798828125 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	568.4341886080801486968994140625 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	284.21709430404007434844970703125 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	142.108547152020037174224853515625 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	71.0542735760100185871124267578125 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	35.52713678800500929355621337890625 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	17.763568394002504646778106689453125 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	8.8817841970012523233890533447265625 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	4.44089209850062616169452667236328125 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	2.220446049250313080847263336181640625 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	1.1102230246251565404236316680908203125 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	555.11151231257827021118158404541015625 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	277.555756156289135105590792022705078125 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	138.7778780781445675527953960113525390625 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	69.38893903907228377639769800567626953125 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	34.694469519536141888198849002838134765625 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	17.3472347597680709440994245014190673828125 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	8.67361737988403547204971225070953369140625 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	4.336808689942017736024856125354766845703125 KHz	Integrated	40 Kbytes	5448	32B	12B	32B	32B	32B	32B	32B	32B
Power Macintosh 6900G50	600	2.168404344971008868012428062677383422875000											

INSTALLING A NEW PROCESSOR UPGRADE

Installing a processor upgrade card in newer Macs is a breeze. Simply pull your Mac's case apart, pull out the old processor card, insert the new processor card, and push the reset switch (as detailed above). Put everything back together, power up your Mac, and install any new software for the upgrade card.

For older Macs, it can be more difficult—if not impossible—depending on the model. Some processor upgrades are simply cards that you slip into a Processor Direct Slot, while others require you to remove the entire logic board and replace it with a new one. It all depends on the Mac and the upgrade.

What if Something Goes Wrong?

Sometimes, after you install new upgrades, your Mac won't start up, or it will behave strangely. If it does, here's what you can do:

■ **MAKE SURE THE NEW CARD IS SEATED PROPERLY.** Sometimes it takes a lot of power to push it firmly into place. If that doesn't work, try pulling the card out and putting it back in.

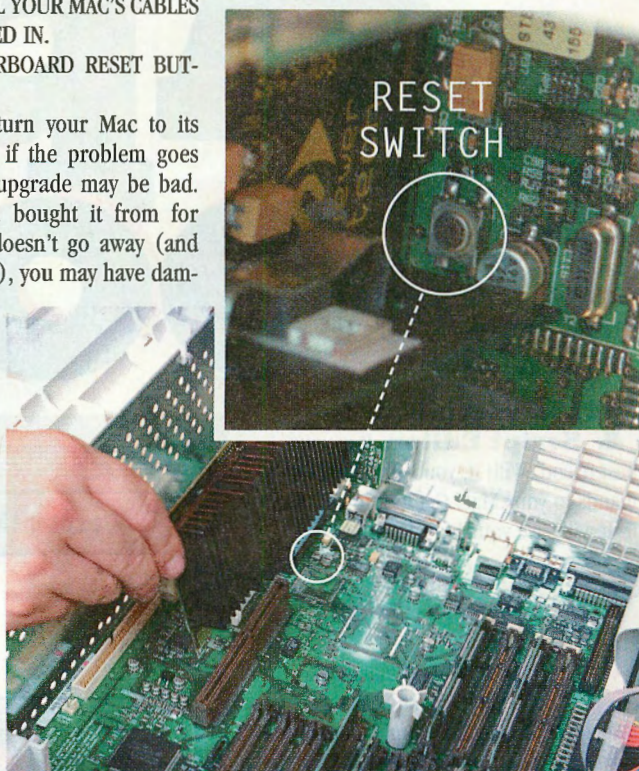
■ **MAKE SURE THAT ALL YOUR MAC'S CABLES ARE PROPERLY PLUGGED IN.**

■ **PUSH THE MOTHERBOARD RESET BUTTON AGAIN.**

If all else fails, return your Mac to its original state and see if the problem goes away. If it does, your upgrade may be bad. Call the company you bought it from for help. If the problem doesn't go away (and this is exceedingly rare), you may have damaged some component in your Mac. Stop right there and take it into a certified Apple repair shop for help.

HOT TIP:

Your motherboard's reset switch looks like this. Push it, and it ensures that your Mac will see new upgrade cards by zapping the PRAM.



handyman

SUPERCHARGING WITH MAC OS 8.1

You can't stay away from the latest and greatest, can you? We bet you're itching to install Mac OS 8.1 and its new disk format, HFS+, but you aren't quite sure you should make the leap. If you just can't resist (it is, after all, a pretty spiffy upgrade), here's what you should know about it. (If you want to upgrade to HFS+, see "How to Switch to HFS+" on page 60.)

■ **HFS+—**Also known as Mac OS Extended Format, HFS+ is the new drive format from Apple. Switching to HFS+ provides some benefits, but it also causes some problems: namely, many utilities (such as Norton Utilities for Macintosh) don't work with HFS+. Also, 68040 Macs can't use HFS+-formatted disks as start-up disks or for virtual-memory storage. The solution? Wait for updates for your favorite utilities, in the first case, and upgrade to a PowerPC-based Mac, in the second case. Remember, you don't have to upgrade to HFS+ to use Mac OS 8.1.

■ **CONFLICT CATCHER PROBLEMS—**Conflict Catcher 4 does not work with Mac OS 8.1, a conflict serious enough to warrant some attention. Casady & Greene has already introduced an updater for Conflict Catcher 4 that brings it to version 4.1.1. Update Conflict

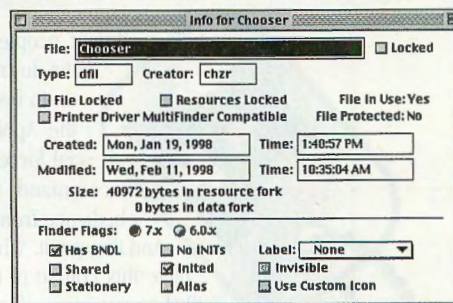
Catcher 4 before installing Mac OS 8.1.

■ **SOUND PROBLEMS—**Mac OS 8.1 changes the Sound Manager slightly; as a result, some applications that use sound don't work properly. For instance, Avid Cinema's audio source choice is removed. To work around this until an update is available, check Mac OS 8.1's Control Strip to set the proper sound source while Avid Cinema is in the foreground. Xclaim VR has a similar problem: the sound source is switched when changing channels. The fix is the same: use the Control Strip to set the proper sound source.

■ **CD-ROM PROBLEMS—**CD-ROM ToolKit 3.0's caching ability doesn't work properly with HFS+. To work around this problem, either turn off disk caching or move the cache to an HFS volume.

■ **CORRUPTED NETWORKING COMPONENTS—**Although certain utilities tell you several of the Open Transport components are corrupted, this isn't the case. During the installation process, a little bit of information is added to each component. It doesn't hurt to open these with ResEdit and let ResEdit fix them; on the other hand, it doesn't hurt to leave them alone, either, since they're not actually damaged.

■ **KALEIDOSCOPE 1.8.1—**This popular customization utility has a problem with Mac OS 8.1's virtual memory. When you use a scheme that draws patterns in menus while virtual memory is on, your computer may crash. To solve this problem, either turn virtual memory off (not recommended) or switch to a scheme that doesn't draw patterns in menus. Expect an updater soon.



■ **MISSING CHOOSER ICON—**Sometimes, after moving to Mac OS 8.1, the Chooser icon will turn into a generic icon. To fix this, use ResEdit to turn the Chooser's bundle bit on (the BNDL check box).

David Reynolds owns two red plaid shirts and has been told that he looks like Home Improvement's Al Borland.



Apple Bootcamp

BY BRIAN SHIN

This, recruits, is the **Script Editor**. It is your best friend. With it, you will issue commands to your Mac. Get to know it. Name it. It will save your life someday.

A. This is the area where you can type notes about the script.

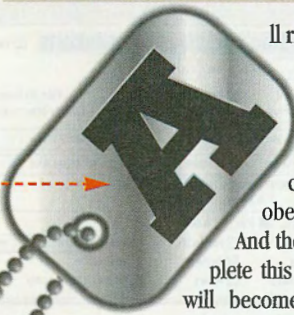
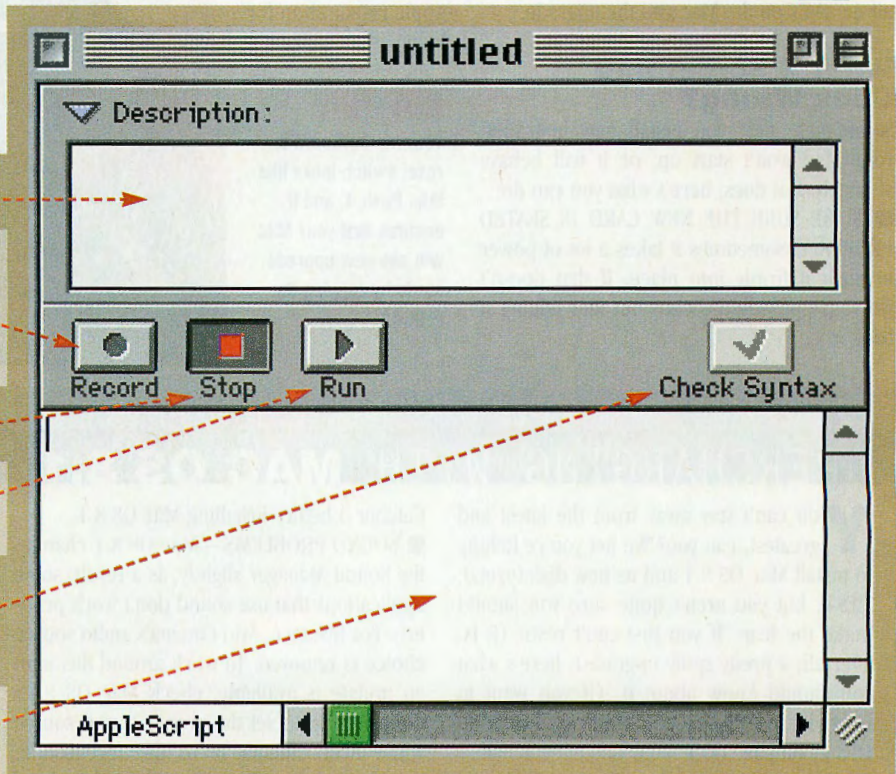
B. Press the Record button, perform your actions, and any AppleScript-recordable program will generate your script automatically.

C. Press the Stop button after you finish recording.

D. Press the Run button to run your script.

E. The Check Syntax button compiles your script. The compile process checks your script's syntax and prepares the script for your computer to execute.

F. This is the work area, in which you type your script.



Ill right, people. Line up and quiet down. You signed on to become part of the AppleScript special forces, those who command respect and obedience from their Macs. And they get it. When you complete this course of training, you will become one of the few, the proud, the powerful AppleScripters. You will be able to order your Mac to do something, and it will ask, "How fast?" That is, if you tell it to. Now, I know what you're thinking, recruit: "AppleScript is complicated. I'll never finish training." I guarantee it is not as difficult as you think it is. With a little discipline and a little practice, you *will* be in control of your Mac in ways you never thought possible.

Equipment Checklist

Welcome to the first day of AppleScript basic training. Before you can begin training, you need to have AppleScript installed on your Macintosh. AppleScript ships free with the system software so there really is nothing to install, unless you've done a custom install and somehow missed the AppleScript portion. To verify that you have AppleScript installed, open the Extensions Manager and look for the following extensions:

- ☒ APPLE EVENT MANAGER
- ☒ APPLESCRIPTLIB
- ☒ APPLESCRIPT

There should also be a Scripting Additions folder in your Extensions folder or in your System Folder. If any of these are missing, use your system installer and perform a custom install for the AppleScript component only.

Script

DAY 1: Marching

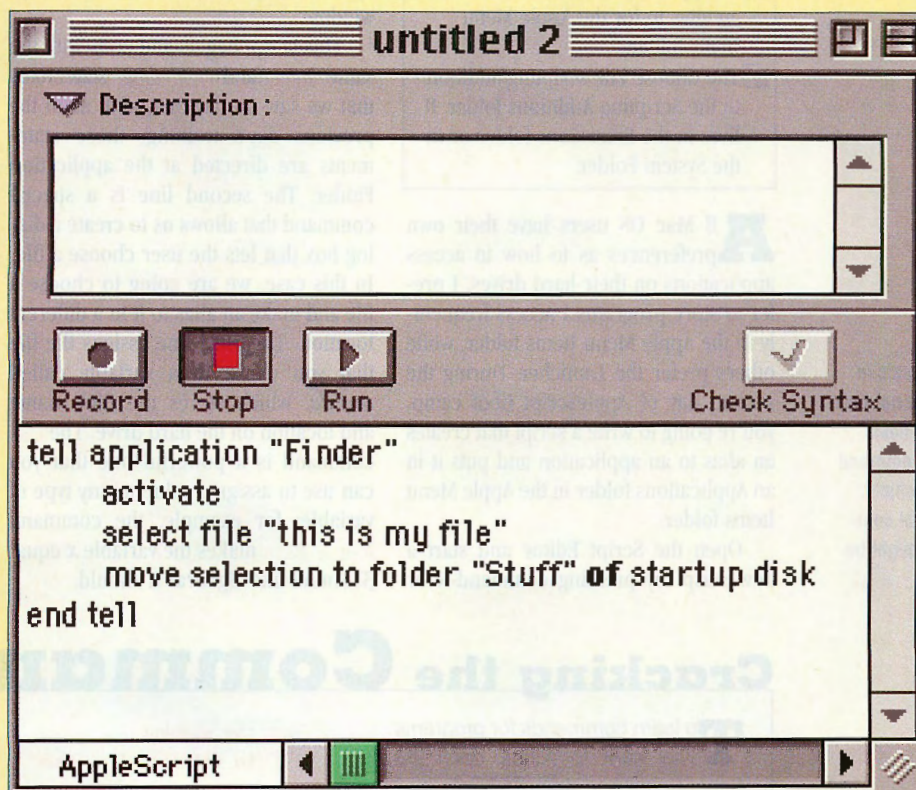
What you'll need:

- ☒ The Script Editor.
- ☒ A folder called Stuff on the topmost level of your start-up hard disk.
- ☒ A file on your desktop.

Let's start our first day with marching orders—learning how to use AppleScript to move files from one folder to another. This one is easy. Suppose you have a finished-items folder for your project, in which you'll store all the finished files related to the project. To start scripting, you need to open the Script Editor, which is usually found in the Apple Extras folder. If you need help finding it, press command-F and search for it. Type the script at right into the Script Editor. Replace the words *this is my file* with the name of the file you want to move. Click the Run button and watch the script run.

Notice that AppleScript looks just like English. You can boss programs around with the commands between the **tell** and **end tell** statements. These statements frame what you're telling an application (or the Finder) to do. That's one of the great things about using AppleScript to do your dirty work. You don't have to learn an obscure programming language such as Pascal or C, and it doesn't cost you anything but time. If you don't feel like typing, you can record this script easily. Just press the Record button, perform the action, and press the Stop button.

Although moving files doesn't sound very interesting, it's at the heart of such tasks as organizing your hard drive or backing up a bunch of files. After all, which would you rather do: drag and drop files and folders onto your backup media each week (or however often you back up), or spend five minutes writing an AppleScript that will do the job for you with a single double-click? I thought so.



Getting Started

As you can see, AppleScripts can get complicated quickly. Although AppleScript makes long, repetitive tasks easy (in most cases, they're reduced to a click or two), writing the initial script can be tough. Here's how you get started with a more complicated script. Think about the task you want to script, and write down the steps you need to take to accomplish the task. Then divide each step into the elements and actions needed to accomplish that step. For example, to make a script that opens up Netscape Navigator and fetches a couple of URLs, break down each step:

- ☒ LAUNCH NETSCAPE NAVIGATOR.
- ☒ ASK NAVIGATOR TO FETCH THE FIRST URL.
- ☒ OPEN A SECOND NAVIGATOR WINDOW.
- ☒ ASK NAVIGATOR TO FETCH THE SECOND URL.

And so on. Once you have broken down each step, writing a script to make the steps happen becomes much easier. Finally, you need to make sure all your steps work together. Keep your AppleScript writing process as general as possible so you can adapt the script to new circumstances.

HOT TIP:

Read AppleScript Read Me (parts 1 and 2), which is installed along with AppleScript. This contains tons of great information about AppleScript.

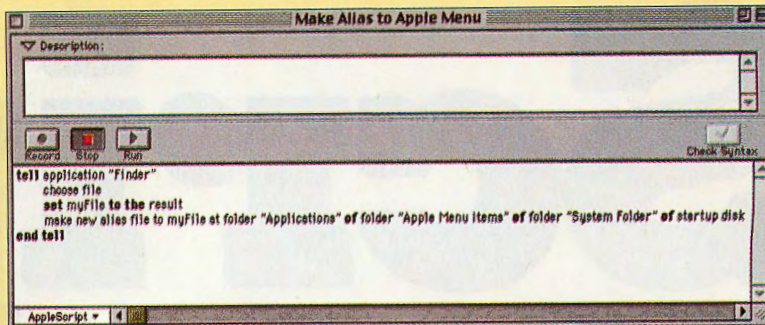
DAY 2: Alias Creation (Special Ops)

What you'll need:

- ☒ The Script Editor.
- ☒ A folder called Applications in your Apple Menu Items folder.
- ☒ An application you'd like to make an alias to for the Apple Menu Items folder.
- ☒ The Choose File scripting addition in the Scripting Additions folder. It lives in the Extensions folder or in the System Folder.

All Mac OS users have their own preferences as to how to access applications on their hard drives. I prefer to store programs I access frequently in the Apple Menu Items folder, while others prefer the Launcher. During the second day of AppleScript boot camp, you're going to write a script that creates an alias to an application and puts it in an Applications folder in the Apple Menu Items folder.

Open the Script Editor and start a new script by pressing command-N or



choosing New Script from the File menu. Type the script above into the new script window.

This script begins and ends with the same `tell` and `end tell` statements that we saw on day one, and, as in the previous day's training, those statements are directed at the application Finder. The second line is a special command that allows us to create a dialog box that lets the user choose a file. In this case, we are going to choose a file and make an alias to it in a different location. The third line assigns the file that you chose to a variable called `myFile`, which stores the file's name and location on the hard drive. The `set` command is a powerful one that you can use to assign a value to any type of variable; for example, the command `set x to 3` makes the variable `x` equal 3. Sound like algebra? It should.

The command `make new alias file` on the fourth line creates the alias file using the `myFile` variable as the source for the alias. It then puts the alias in the Applications folder we made at the beginning of this exercise. This command also demonstrates one of the more confusing points about AppleScript: Command lines vary from one application to another. Another application (other than the Finder) may also use the `make` command, but in a drastically different way. For example, application X may have the following script:

```
tell application "X"
make Bob scared
end tell
```

So how do you know which commands an application will accept and how to phrase those commands? Open an application's dictionary, of course. See "Cracking the Command Code" below.

TIP:

Commands in AppleScript take on this basic form: **command (verb) object**. A typical command might be quit Claris E-mailer.

Cracking the Command Code

To learn commands for programs you want to script, open the Script Editor and do the following:

- ☒ **CHOOSE OPEN DICTIONARY** from the File menu.
- ☒ **FIND THE APPLICATION** whose commands you want to see. If you have a question on a scripting addition, press the button to go directly there. If you go to the folder where your application is and it doesn't appear, your application isn't scriptable.
- ☒ **YOU CAN ALSO DRAG** the application's icon onto the Script Editor icon to open the application's dictionary.

Here's how the Finder's `make` command looks in the dictionary:

`make: Make a new element`
`make`

`new` type class - the class of the new element
`at` location reference - the location at which to

`insert the element`
`[to reference]` - when creating an alias file, the original item to create an alias to

`[with data anything]` - the initial data for the element

`[with properties record]` - the initial values for the properties of the element

`Result: reference - to the new object(s)`

Wow. That's confusing. Let's walk through it and make some sense of it. The command is `make`. OK, we understand that. Make will make some new item somewhere. Next, the two commands without brackets are required items (or parameters) in the AppleScript command. The `new` parameter is followed by the type class. In the example above, we filled that in with the alias type class. There

are lots of type classes, including text files, PICT files, and all sorts of application-specific files, but the only type class that makes sense here is the alias type class. The second required item is the `at` item, which is followed by a location reference. This is where the new item will be created on your hard drive.

Now, we'll look at the bracketed items. The brackets mean that the items aren't used all the time. The `to` item points to the original file you want to create an alias to. The `with data` item lets you package certain kinds of information (some text or a PICT image) in a file—similar to saving a file in an application. The `with properties` item lets you set some of the properties for the item you're making. Finally, the `Result` line tells you what you'll end up with—in this case, a reference to the new object, which you can pass to another part of your script, if you like.

DAY 3:

File Renaming (Covert Ops)

What you'll need:

- ☒ The Script Editor.
- ☒ A file you want to rename on the desktop.
- ☒ The file-scripting addition in your Scripting Additions folder.

Now that you know how to create aliases, it's time to learn how to change identities. After all, these go hand in hand. Open a new window in the Script Editor and type the script below.

In this script, we see the `tell` and `end tell` commands for the Finder application, the `choose file` command, and the `set` command, all of which look familiar. This script builds

on the previous example by adding a dialog box that lets users enter some information. Create the dialog box with the `display dialog` command. Try the following script to see the simplest form of a dialog box:

```
tell application "Finder"
    display dialog "I'm a
MacAddict"
end tell
```

If you modify the `display dialog` command to the following:

```
display dialog "Enter your
name" default answer "Bob"
the dialog box will now have a space
for users to type their names. You can
change the default cancel and OK but-
tons by adding the commands in curly
brackets:
```

```
display dialog "Use Win95?"
buttons {"Yes", "Self Destruct"}
Now that you understand the basics
```

of the `display dialog` command, we need to capture the value of what the user typed into that dialog box. To do so, we use the `set` command. Here's a look at some more advanced uses of the `set` command:

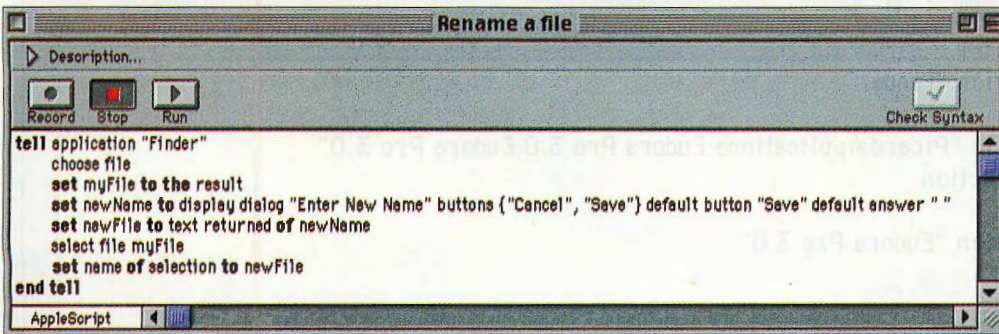
```
set x to display dialog
"text" default button "Save"
default answer " "
```

```
set y to text returned of x
If you pretend that you're the Mac-
intosh and read the above two lines,
you would interpret the following:
```

★ Display a dialog box and link it to variable `x`.

★ When the user types text in that dialog box and presses OK, `x` then knows which button the user pressed and the text the user typed.

★ The text the user typed is then passed to the variable `y`, so other parts of the script can use it later.



The Right Tool for the Job

When you're on the road to becoming an AppleScripter, if you know what type of script to use in each situation, you'll meet with success. There are three basic types of AppleScripts—script text, compiled script, and applications—that represent (loosely) three different stages in the AppleScript life cycle. What's the difference? Here's what:

- ☒ **SCRIPT TEXT** is a plain text file. It's the first stage in making an AppleScript. Script text looks as if you typed it in SimpleText. It doesn't do anything useful until it's been compiled and run. Use it to trade scripts or point out script features.
- ☒ A **COMPILED SCRIPT** is the digested form of script text. The compile process takes a script-text file and converts it into lan-

guage your Mac understands. During this process, the Script Editor checks your commands, changes the script's font (to note that the script has been compiled), and bolds the key commands (verbs). Once a script has been compiled, pressing the Run button actually makes it run. Use the compiled script to check your syntax and test a script.

- ☒ **APPLICATIONS** are the final AppleScript form. They start from compiled scripts but don't need the Script Editor to run. They work independently, just as non-AppleScript applications do. Use an AppleScript application as you would other applications.

These script applications can take on a few forms: run-only, droplet, and stay open.

- ☒ **RUN-ONLY:** This format prevents someone from making modifications to the script. If you don't want anyone poking around in your AppleScript, use a run-only application. This will keep busybodies out of your code. Highest-security option.
- ☒ **DROPLET:** Drag and drop an item onto this type of script, and it will perform its magic on the dropped item. Similar in concept to how Aladdin's DropStuff works.
- ☒ **STAY OPEN:** A stay-open script does just what it says. When you launch it, it stays open and waits for things to happen—like most everyday applications.



DAY 4:

Mail Call

What you'll need:

- ☒ The Script Editor.
- ☒ An email application (we use Eudora Pro 3.0 in this example).

Now that you've completed the first three rounds of training and are getting used to the idea of what an AppleScript looks like and how to use one, it's time to move on to something a little more advanced—like mail call.

With your growing AppleScript powers, you can start to make fetching mail easier. Make a script like the one below and place it in the Startup Items folder;

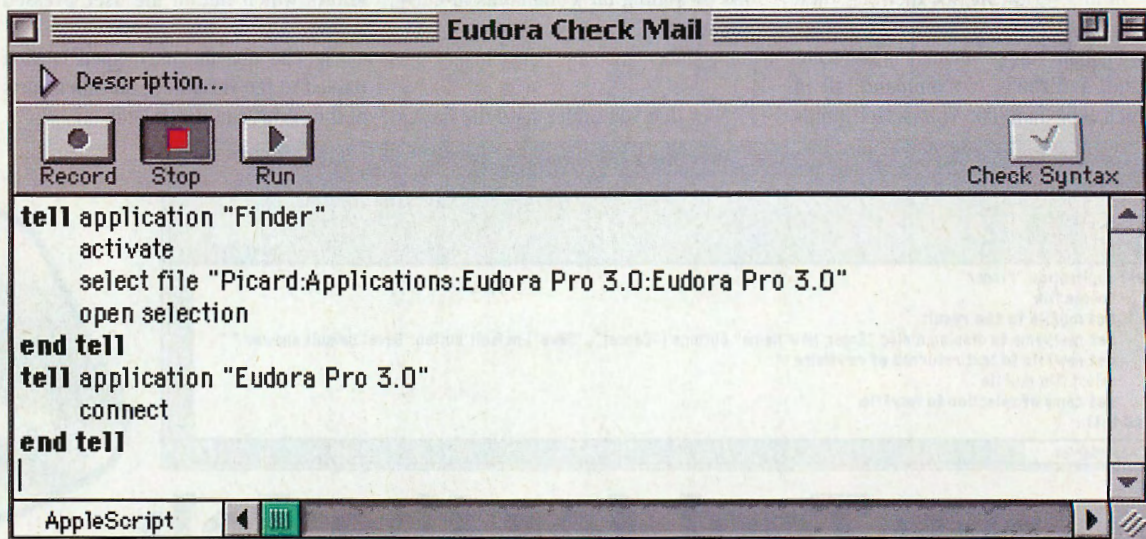
your Mac will fetch your mail each time it starts up.

In this script, the first **tell** block tells the Finder to open the Eudora Pro 3.0 application. You can specify the path to any file by two methods. The script example we're using shows a precise way to open the Eudora application. The problem with this precision is that you might break your script if you move the application or if you rename the hard drive. You can also open Eudora by substituting the line below for line three in the script:

```
select file "Eudora Pro 3.0"
of folder "Eudora Pro Folder" of
folder "Applications" of startup
disk
```

This is the method we've been using until now. This line of code assumes you have a file named Eudora Pro 3.0 in a folder named Eudora Pro Folder in a folder named Applications at the root level of the start-up disk.

The second **tell** block talks to Eudora and tells it to check mail. You can find the command that tells Eudora to check for mail in the dictionary for Eudora. From the Script Editor, choose Open Dictionary from the File menu. Choose the application whose commands you want to view and press the Open button. From here, you will see how we built the command into our example script.



Advanced AppleScript Equipment

Programming in AppleScript requires nothing but the free Script Editor. However, once you begin scripting, you may notice that the Script Editor lacks some tools essential to scripting efficiently—for example, find and replace, and debugging. Third-party tools such as Scripter and Script Debugger replace the Script Editor, providing many features to make scripting easier. Scripter excels with real-time debugging, command building (very useful for beginner scripters), command wraps, and an application tool bar that automatically creates tell blocks and shows you their dictionary. Script Debugger provides an interface simi-

lar to a VCR's and can handle large scripts (larger than 32K).

PreFab Player allows you to script the unscriptable. By working with AppleScript in a QuickKeys-like manner, PreFab Player lets you click buttons and use menu commands in applications that don't otherwise understand AppleScript. FaceSpan is another useful tool that allows you to build user interfaces for scripts. With FaceSpan, you can build full-fledged applications, complete with windows, dialog boxes, and the whole bit. It's a great intermediate step before getting down to serious Mac programming using C or another high-level language.

Third-Party Software

- ★ **Scripter**
202-298-9595,
<http://www.mainevent.com>
- ★ **Script Debugger**
800-282-2732 or 716-871-6555,
<http://www.latenightsw.com>
- ★ **FaceSpan**
800-322-3772 or 801-226-2984,
<http://www.facespan.com>
- ★ **PreFab Player**
978-692-1256,
<http://www.prefab.com>

DAY 5:

Write Home to Mommy

What you'll need:

- ☒ The Script Editor.
- ☒ An email application (we use Eudora Pro 3.1 in this example).

Now that you know how to get your mail, it's time to start sending mail back. The script below allows you to create a new message in Eudora and send it.

Here, we first set the variable `theText` to the string "This is an automatic message." Next, we tell Eudora Pro 3.1 to bring itself to the front and

create a new mail message at the end of its out box. We then set the To, From, Subject, and Message fields. Finally, we queue the message, connect to the Internet, and send the message.

With all of the `set` commands, you can add a variable to make the message sending flexible. For example, you can have:

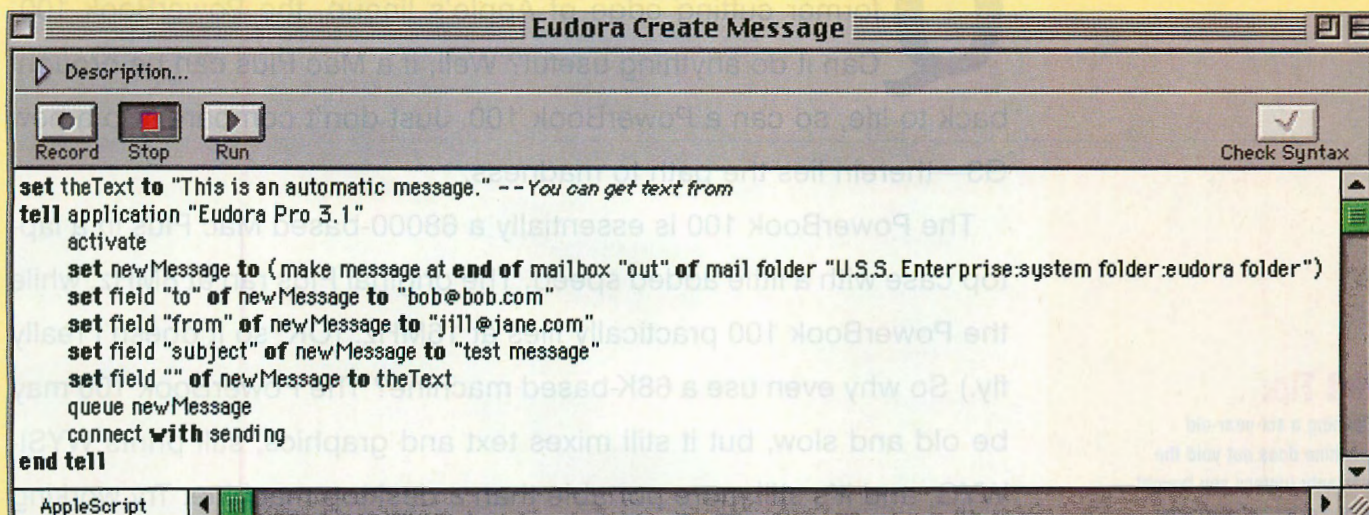
```
Set field "to" b of
newMessage to aVariable.
```

Then whatever is in that variable is put in the body of the email message. This command serves as the basis for more interesting scripts, in which we can do things such as create drop boxes for several people. Drop an item (such as an image) on one of these scripts, and

AppleScript makes a new email message, attaches the item to that message, and sends it off—all without requiring your intervention.

With all of this information, you have just graduated basic training. Congratulations, soldier—you are now part of the AppleScript corps. Use your newfound powers to amaze your friends and make Mac life easier, but don't ever, ever abuse your command of AppleEvents.

Brian Shin is the former controller of Xplain Corporation, publishers of *MacTech Magazine* and *Apple's Develop*. He has also become an avid AppleScripter, participating in the Apple Script Language Association. He is not, in fact, currently a drill sergeant.



Scripting Sources

The Internet provides an interactive and current way to learn about AppleScript. Scripting professionals take great pains to ensure that the data you need as a novice or expert is readily available at your fingertips. If you can't find the information you want in any of the online resources, try sending email to the AppleScript mailing list and you may receive your answer within hours. Visit <http://www.lists.apple.com/applescript.html> to sign on to various AppleScript email lists. The Apple mail lists are a wonderful resource for scripting questions.

Scripters may still need books for help. Here are some that helped

me along the way. (The first three provide AppleScript teaching material; the last four are more like AppleScript reference manuals.)

- ★ *The Tao of AppleScript*, by Derrick Schneider, Hayden Books ISBN 1-56830-115-4
- ★ *Danny Goodman's AppleScript Handbook*, by Danny Goodman, Random House ISBN 0-679-75806-2
- ★ *Applied Mac Scripting*, by Tom Trinko, M&T Books ISBN 1-55828-330-7
- ★ *AppleScript Language Guide*, by Apple Computer, Addison Wesley ISBN 0-201-40735-3 (be sure to get the proper dialect)
- ★ *AppleScript Finder Guide*, by Apple Computer, Addison Wesley ISBN 0-201-40910-0
- ★ *AppleScript Scripting Additions Guide*, by Apple Computer, Addison Wesley ISBN 0-201-40736-1
- ★ *AppleScript Applications*, by John Schettino, AP Professionals ISBN 0-12-623957-6



old mac

Pumping Up a PowerBook 100

By T. Kelley Boylan

Q uiescent and forgotten in the back of your desk drawer is the former cutting edge of Apple's lineup, the PowerBook 100. Can it do anything useful? Well, if a Mac Plus can be brought back to life, so can a PowerBook 100. Just don't compare it to a new G3—therein lies the path to madness.

The PowerBook 100 is essentially a 68000-based Mac Plus in a laptop case with a little added speed. The original Plus ran at 8MHz, while the PowerBook 100 practically flies at 16MHz. (OK, so it doesn't really fly.) So why even use a 68K-based machine? The PowerBook 100 may be old and slow, but it still mixes text and graphics, still prints WYSIWYG, and it's still more portable than a desktop machine. Try working on a G3 tower with a 17-inch monitor in an airplane sometime.

Or what could be better for someone who has no room for a com-

puter, no time to set up monitors and keyboards, no money, and just needs email? Your mom/dad/brother/cousin/aunt/uncle/significant other will think you're king of the world when you hand him, her, or them a personal high-tech toy. If they're concerned about its being, you know, one of those *Apple* laptops that catches fire, tell them not to worry. This one's made by Sony.

Hot Tip:

Opening a six-year-old machine does not void the warranty (unless you bought a *long* extended warranty), but you are responsible for damage done when you open your own Mac.



What You Have to Work With



RAM

The PowerBook 100 can handle from 4MB to 8MB of RAM. Logically, you should have all the

RAM possible, right? Not necessarily. 68K Macs aren't fast, and jamming them with RAM doesn't help much. It may make them a little more capable, yes, but is it really worth spending \$200 to jump from 4MB to 8MB of RAM? A mere 2MB upgrade costs about \$100, so your humble author suggests you use what you have and avoid the upgrade, unless there's simply no other way to get the job done.

If you already have more than 4MB, great, but don't spend money unless you absolutely have to—or you're building a museum of old Macs. Still want the RAM? Try one of these URLs:

<http://www.nwfla.com/mac/pb/powerbook100>
<http://www.clcr.com/memory/flapple70.htm>

Battery

Being the earliest of PowerBooks, the PowerBook 100 wasn't perfect. The batteries were prone to wear out and the power connector was prone to fail. If you need a new battery (Apple part number 661-0782), any Apple dealer should be able to supply it. A failed power connector is an entirely dif-

ferent beast. To get around this problem cheaply, you need to have experience with a soldering iron or know someone who does. Apple makes this repair by swapping the whole motherboard, which costs hundreds of dollars. If you're willing to delve into the world of hot tin, you will find a full description of the soldering process online at <http://members.aol.com/DIYfixamac/Powerbook100Problems.html>.

Storage

Thanks to ongoing insanity in the storage industry, you'll soon be able to buy laptop hard drives the size of a credit card that hold a gigabyte. In today's world of multi-gigabyte multimedia files, it seems a little silly that the PowerBook 100 shipped with a choice of a 20MB or 40MB drive, but that's the way it was.

If you do buy a new drive and you can afford up to a gigabyte, go for it. Not all drives will meet the PowerBook 100's specifications, so you should ask before you buy. If the seller doesn't know, don't buy. One vendor you can try, although we can't vouch for it personally, is <http://www.sirius.com/~exupery/forsale.html>.

A simpler solution than installing an internal drive is to buy an external drive that holds several gigabytes and plug it right in. Like most Macs, the PowerBook

100 has a SCSI port on the back. It requires a special kind of SCSI cable, though, so make sure you have one before you try to attach an external SCSI device. Once you have the cable, you can plug in any SCSI device, from a Zip drive to a multigigabyte array, and you're ready to go—almost.

A PowerBook 100-series drive must be formatted at a 1:3 ratio. The drive makes one read or write for every three rotations of the hard drive platter, which means it's rather slow. Modern drives all read or write at 1:1—one read or write per rotation—and most modern formatters know to set the ratio properly. Most. Just to be safe, set it manually to 3:1, whether you're using Casa Blanca's Drive7, Charismac's Anubis, FWB's Hard Disk ToolKit, or any other of the scores of formatting products on the market.

If you buy an external drive, assume you'll use it eventually on another machine, because an old PowerBook is, well, old. Chances are it'll either die or end up back in the drawer because it's too slow to use. Be sure to buy an external drive that'll work with the G3 you're no doubt saving up for this very minute.

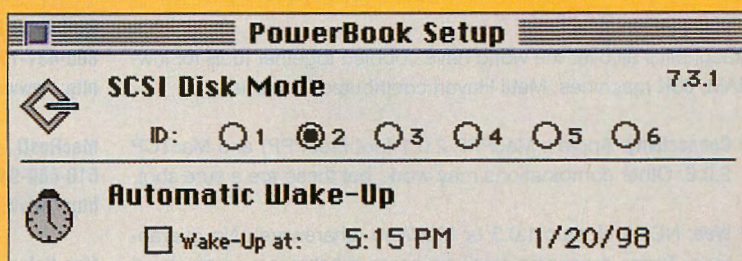
T. Kelley Boylan is a Mac administrator who owns and uses Macs exclusively.

The World of a SCSI Disk

There's more to a PowerBook 100 SCSI than external storage. In SCSI Disk Mode, a PowerBook becomes an external drive mounted on another Mac's desktop; invoke it via a special 30-pin PowerBook SCSI cable. Plug one end into the PowerBook, one end into another Mac, boot up both, and the PowerBook 100 shows up as a mounted volume on the desktop—very handy for installing, synchronizing, and generally moving data around.

You'll need a special HDI-30 SCSI cable. The standard cable for connecting external SCSI devices such as Zip or Jaz drives to a PowerBook is an HDI-29—one pin in the corner is missing. The HDI-29 is fine for hooking up an external drive, but it won't put your Mac into SCSI Disk Mode. Make sure your cable has all 30 pins or a switch to flip between standard SCSI and SCSI Disk Mode.

Every SCSI device must have its own ID number, lest it become confused. The PowerBook Setup control panel sets the SCSI ID for your PowerBook's SCSI Disk Mode, and you'll know yours isn't unique if the machine to which your PowerBook is connected refuses to boot. If you see no happy Mac, hear no chimes, and have just a cursor on screen, you probably have a SCSI ID conflict.



The default PowerBook SCSI ID is 2.

WARNING: Always shut down your Mac and any SCSI devices when attaching SCSI drives. It's painfully easy to toast a drive (or a logic board) and wipe the data by hot-plugging SCSI cables.

Video

The passive matrix, 640-by-400-pixel, black-and-white screen may not be flattering (or upgradable), but it's functional. Color is possible if you can dig up a SCSI display adapter, few of which still exist. It plugs into the SCSI port, filling it, and connects to an external display. The video is far from fast and the colors aren't great, so it's not exactly a wonderful gadget. If you can find one for free, go for it, but don't spend money on one.

Modem

You have two choices: one slow, one less slow (but not fast). The PowerBook 100 series is based on a venerable architecture that can't understand brash young 56K modems, nor can it be taught. An external modem gives you access to 9600 baud, while an internal runs at a top speed of 2400 baud. To get all 9600 baud, just plug in an old external modem—no need to open the case and deal with all the nefarious tiny internal parts. If you're content with a mere 2400 baud with an internal modem (Apple part number M0970LL/A), the machine's still perfectly viable for email on the road. Let's face it, email's all this machine really needs to do—black-and-white via a slow modem is not the best way to check out Web pages.

Networking and Printing

As with any Mac, you can plug straight into an AppleTalk network. The only thing you need is a PhoneNet adapter, available from Farallon (<http://www.farallon.com>). If you desperately need Ethernet, adapters exist, but don't expect Ethernet's usual 10 Mbps (megabits per second). Data will move slowly, very slowly. To find such an adapter, try <http://www.allelec.com/powerbok.htm>.

As far as printing goes, any Mac-standard printer will work, from ImageWriters through the new LaserWriters. However, not all printer drivers will. Newer drivers tend to be RAM hogs, sopping up memory like starving animals. When shopping for printers, call the manufacturer and ask if old drivers are available. A used \$150 HP DeskWriter with a version 3.1 driver works wonderfully. If you have a StyleWriter on hand, be sure it's *older* than the StyleWriter II. The StyleWriter II and later models require a 68020 or faster processor.

System Software

Apple finally turned its back on the past with Mac OS 8. This is a good thing; the Mac OS needed its internals cleaned. System 7.5.5 works fine on the PowerBook 100. Stick with Classic Networking (over Open Transport) and forget QuickDraw GX; don't try to install it. The installer may say that it's done, but the icons are invisible.

Internet software

Macoholics all over the world have cobbled together tools for low-RAM, 68K machines. Matti Haveri contributed to this list.

- **Connectivity:** Apple's MacPPP 2.0.1 (not FreePPP) and MacTCP 2.0.6. Other combinations may work, but these are a sure shot.
- **Web:** NCSA Mosaic 1.0.3 or MacWeb (shareware). No guarantees. These programs work on some machines and crash on others. More RAM is better.
- **Mail:** Qualcomm's Eudora or, for shareware, Eudora Lite, LeeMail, or Pegasus.
- **News:** The shareware program NewsWatcher—any recent version (older versions may also work).
- **FTP:** Fetch or Anarchie, any recent version.
- **AOL:** Best to stay away. Version 2.1 works, if you can find it. America Online isn't distributing it and is phasing out 2.1 access, so don't set up an account assuming you'll have connectivity at your fingertips.

■ **CompuServe Information Manager:** Any recent version.

■ **Productivity software:** You can perform most of the basic productivity tasks, in style, on a Mac Plus. Here are the applications that work best.

Word processing: Claris's MacWrite, T/Maker's WriteNow, ClarisWorks, Microsoft Works 3.X and Word 5.1. (Word 6 won't run on a 68000 processor.)

Database: ClarisWorks.

Spreadsheet: ClarisWorks, Microsoft Excel 4.0.

Graphics: Claris's MacDraw, ClarisWorks.

Communications: Zterm and White Knight (both shareware).

Utilities and tools: Apple's Disk First Aid and HDSC, and Symantec's Norton Utilities 2.0.

Games

Say good-bye to boring business flights! Continuum (shareware) and older versions of Sierra Online's Lode Runner are dandy twitch games, and for the less intense experience there's Semi-colon Software's Solitaire 'til Dawn. These and many more are at <ftp://ftp.funet.fi/pub/mac/games>. Most of the games are from 1992 and earlier, which means that they're black-and-white and 68000-compatible.

Hardware Sources

Contact several vendors when you shop and ask about warranties and returns, just in case. This list isn't comprehensive, but it's a good place to start.

The Computer Exchange

800-304-4639

<http://www.compexch.com>

DataTech Remarketing

800-281-3661

<http://www.the-coop.com/datatech/>

GE Capital Electronics Services

800-431-7716

<http://www.ge.com/capital/commequip/es/>

MacResQ

510-689-9488

<http://www.macresq.com>

Mac Sales

888-622-7253

<http://www.macsaleint.com>

Pre-Owned Electronics

800-274-5343

Sun Remarketing

800-821-3221

<http://www.sunrem.com>

Networking

Netopia

1-800-397-8508 (MacWarehouse)

<http://www.netopia.com>

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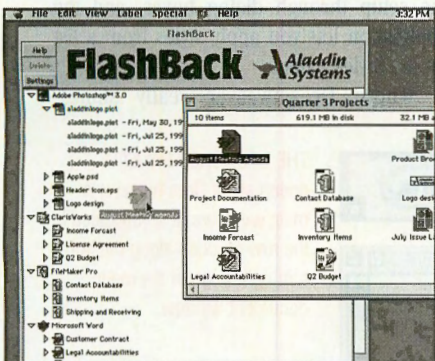
BACK: To any version of any document you saved.

FlashBack only saves the changes.

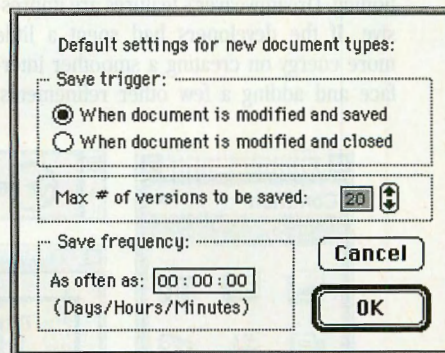
Instead of clogging up your hard drive with a bunch of "Save As" documents (which are entire files, with lots of duplicate information), FlashBack only saves the changes you make to your document, whether it's graphics, design, word processing, databases or just about anything you can dream up. When you want to return to a version, FlashBack rebuilds it, instantly. It's called a *differencing engine*, and it's the **Aladdin Advantage**.

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T-Zone, NCBuy, CDW, ClubMac, Tiger
Direct and other fine software retailers.



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Everything you need to get you through the night. And some stuff for the next day.

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DEVELOPMENT



FREAKIN' AWESOME
The most valuable products, the coolest gizmos.



SPIFFY
A solid offering. Overall a good investment.



YEA, WHATEVER
A few good features, but generally a waste of time and money.



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<http://www.macromedia.com>

PRICE: \$499 (street)

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Macromedia's Dreamweaver is the first WYSIWYG Web-authoring application that can satisfy professional Web developers' seemingly incompatible needs for both page-layout capabilities and straight HTML text coding. The application also offers Webmasters cutting-edge page technologies including Cascading Style Sheets, Dynamic HTML, and absolute positioning. Dreamweaver's features are impressive. If the developers had spent a little more energy on creating a smoother interface and adding a few other refinements,

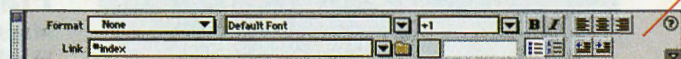
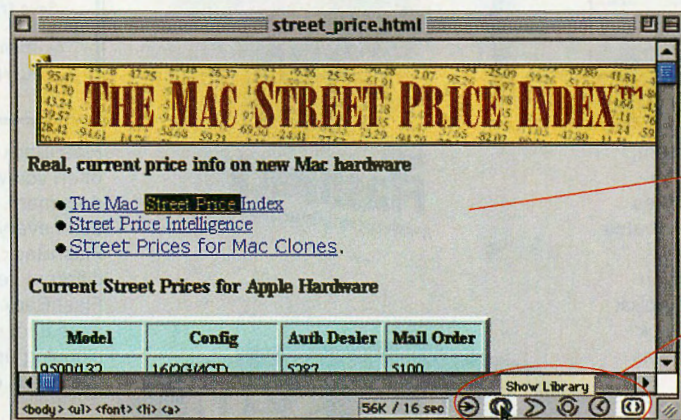
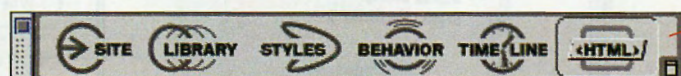
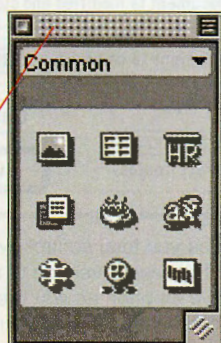
this would be a Freakin' Awesome product.

At first glance, Dreamweaver looks much like the other modern Web-layout applications. It displays a WYSIWYG preview of a Web page surrounded by any of 12 palettes, holding components such as commonly used HTML elements, site-control tools, and a library of reusable items.

The page displays tables, frames, forms, and images in a fair approximation of how they'll look in a browser. But because there's no separate preview mode—in order to preview, you have to switch to a real browser—there's no way to test links within Dreamweaver. A library palette stores commonly used items; altering a library item updates all pages in the site. Dreamweaver has a full complement of tools for creating and manipulating text, tables, forms, frames, and other page elements, but the application breaks no new ground here.

Dreamweaver, however, is one of the first applications to make extensive use of Dynamic HTML—the Web technology du jour—helping Web authors produce all the latest cutting-edge page features with ease. DHTML generates moving, reacting Web pages with the assistance of JavaScript, Cascading Style Sheets, and other client-side aids—no plug-ins required. Using palettes and dialog boxes, the Web author can create elaborate animation, absolute text positioning, rollover buttons, image swapping, and Shockwave-like interactivity—all without typing or even understanding a line of JavaScript. The Cascading Style Sheets standard, which permits exact, page-layout formatting and positioning, is hell to work with in straight HTML code, but Dreamweaver makes the process almost as simple as creating styles in a word processor. You do all the setup through dialog boxes, and the application lets you apply styles from a list on the Styles palette.

Where Dreamweaver really shines,



THE LAUNCHER PALETTE opens six of Dreamweaver's main windows. It's duplicated in the row of icons along the bottom right edge of the main document window.

THE DOCUMENT WINDOW displays an editable Web page as it will appear in a browser.

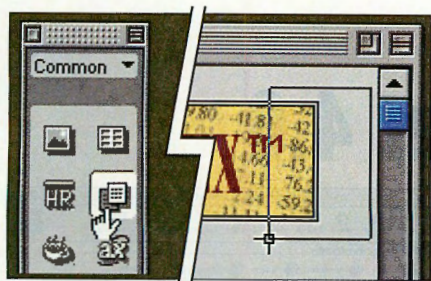
POP-UP TEXT BOXES help identify inscrutable icons.

THE PROPERTY INSPECTOR displays and controls the properties of text, tables, images, and other page objects. Its content reflects the current selection in the main document window.

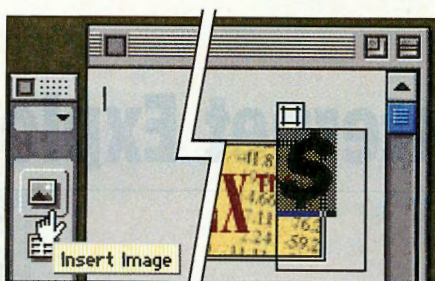
DREAMWEAVER LETS WEB DEVELOPERS lay out pages in WYSIWYG format, or directly enter HTML in BBEdit.

Dynamic Dreams

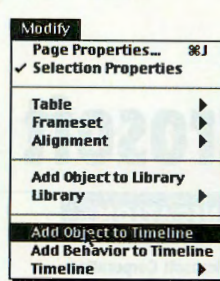
Dreamweaver's Dynamic HTML animation will streak an image (in this case a dollar sign) across your page, on top of the text and images, when the page first loads. You can take a look at an advanced version of this effect at <http://www.dhtmlzone.com/tutorials/index.html>.



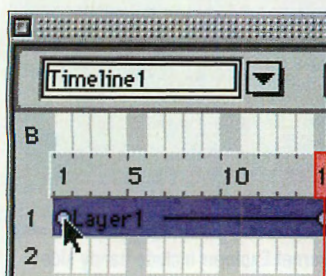
1 Create a layer box at one edge of your page by clicking the Layer button and dragging out the shaper. Make the layer bigger than the image.



2 Insert the image into the layer with the Insert Image button.



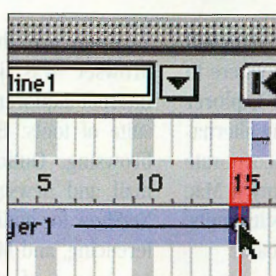
3 Open the timeline tool: Click the layer's handle and select Add Object to Timeline from Modify.



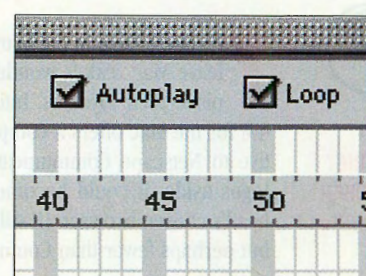
4 Set the start position of your animation by clicking on the keyframe dot at the left.



5 Move the layer to its end position by grabbing its handle and dragging.



6 Mark the end position on the keyframe at the end of the animation timeline.



7 Set your choices for looping and autoplay. Don't forget to preview in your favorite version-4 browser.

though, is in its HTML tools, apparently drawn right from a wish list of professional Web authors. First, the application respects rule breaking—it preserves the author's HTML even when the code is a bit quirky. And the HTML that Dreamweaver creates is clean and formatted to be easily readable.

Second, it doesn't force a Web author to switch back and forth between HTML mode and visual page-layout mode. Instead, in a remarkable, if obvious, innovation, WYSIWYG and HTML views update simultaneously. The same is true even if you prefer working in BBEdit (a copy of which is bundled with Dreamweaver): The work—including the selection—is updated live between the two applications. And since Dreamweaver works natively in HTML, there's no need to save a page before previewing it in the browser.

Finally, a site window lets you work with files on a remote Web server and make changes across all pages. Dreamweaver's site-management tools are designed for collaborative work. Pages and documents are checked in and out—controlling who may

modify a document—and the application tracks the names of the people who modified each document.

There are many other little touches as well. Dreamweaver tests your page against the features of the latest three versions of Netscape Navigator and Internet Explorer and reports incompatibilities. Some of the dialog boxes offer an Apply button so you can preview changes immediately in the document window. Dreamweaver's color pickers display browser-safe 216-color palettes. And the application allows multiple undos and lists recently opened files for easy access.

Dreamweaver doesn't skip on the power features, but it does fall short on a few basics. For one thing, it's slow; we found the text display couldn't keep up with fast typing on a Power Mac 8500/150. And the application tosses up far too many dialog boxes. To insert an image, for example, Dreamweaver requires navigating two dialogs; only the Windows version lets you drag a file from the desktop. Similarly, setting up frames involves navigating a series of dialogs, where drag and

drop would greatly ease the task. Pasting tab-delimited text into Claris Home Page automatically creates a table, but Dreamweaver offers no such shortcut.

And Dreamweaver doesn't offer any image-manipulation tools at all. If you want to convert your image to a GIF or JPEG, or set transparency and interlacing, you'll have to use a different application. In addition, while the application helps manage a full site of pages, it won't check the integrity of links inside the site, a surprising omission.

Still, despite its shortcomings, Dreamweaver's combination of respect for HTML and powerful control over Dynamic HTML are likely to make it the tool of choice for many professional Webmasters.

—Joseph O. Holmes

GOOD NEWS: Powerful control of advanced features such as Dynamic HTML and style sheets. Terrific preservation of HTML. Good collaboration tools. **BAD NEWS:** Needs interface work: more drag and drop, fewer dialog boxes. Lacks image-processing tools. Slow.



in review

COMMUNICATION
MICROSOFT INTERNET EXPLORER
4.0 p. 40

DEVELOPMENT
DREAMWEAVER 1.0 p. 38
CLARIS HOME PAGE 3.0 p. 44

DISK & FILE
PLUSMAKER 1.0.1 AND
PLUSMAXIMIZER 1.0 p. 49

FUN & GAMES
RACING DAYS R p. 50
SHATTERED STEEL p. 51

GRAPHICS & SOUND
ELASTIC REALITY 3.1 p. 41
MULTI-AD CREATOR2 p. 42
VIDEOSHOP 4.0/3D p. 48

HARDWARE
MAC PICASSO 540 WITH 3D
OVERDRIVE p. 46

THAT'S INFOTAINMENT
A BRONX FAMILY ALBUM p. 52
COMICBASE 3.0.2 p. 52
MICROSHAFT WINBLOWS98 p. 52



reviews

reviews

Microsoft Internet Explorer 4.0

COMMUNICATION

COMPANY: Microsoft Corporation

CONTACT: 800-426-9400 or 425-882-8080, <http://www.microsoft.com/ie/mac/>

PRICE: Free

REQUIREMENTS: 68030 or faster, System 7.1 or later, 8MB of RAM, 12MB of free hard disk space, Open Transport 1.1.1 or later, PPP or direct Internet connection



**FIND
INTERNET
EXPLORER
4.0 on The
Disc.**

The latest salvo in the browser wars will leave Mac zealots wondering where to place their loyalties. Internet Explorer 4.0 for the Mac offers a compelling alternative to Netscape Communicator; corporate logos aside, it could become many a Mac head's chosen browser. IE still has its faults, but perhaps fewer than Communicator.

Gone are the days when a browser was just a browser. Internet Explorer 4.0 comprises a suite of tools: Explorer for Web browsing, Outlook Express for mail and newsgroups, Microsoft NetShow for audio- and videoconferencing, and Microsoft's version of a personal Web server. In the past

these additions felt like window dressing, included only to pad the feature lists, but Outlook Express is a solid email client, a legitimate alternative to Claris Eudora Pro. The only thing missing from IE's suite is a counterpart to Netscape's Composer—an HTML authoring tool. Given the pathetic quality of Composer, though, we may be better off without it.

Internet Explorer's code, while 100 percent Mac, seems more cluttered this time around. Expect more crashes than in the past and some odd behavior when downloading. On the plus side, however, this installation won't unduly load up your System Folder, and Active Setup allows you to download just the elements of the suite you want to use.

Unfortunately, Explorer's performance breaks with the speed-boost precedent previous versions of Microsoft's browser set. In our testing, IE 4.0 was somewhat slower than Netscape Navigator 4.0 and considerably slower than Internet Explorer 3.0. It almost feels like a downgrade. On the other

hand, IE's Java support is solid (though it doesn't compare with the support on the Windows platform) and the Just-In-Time compiler is the fastest on the Mac. The browser prefers 6.1MB of RAM—less than half Navigator's requirements—and the full installation of the entire suite consumes a reasonable 8.7MB of hard drive space.

Internet Explorer now supports Dynamic HTML and the W3C's proposed standards for CSS1 Cascading Style Sheets and Document Object Models. Aside from basic Cascading Style Sheet support, Communicator supports only a proprietary layers format that the W3C rejected as a standard. DHTML is still new to the Web, however, and some sites use early versions of the proposed standard, so don't expect any browser to manage this new, somewhat chaotic element flawlessly.

Explorer also offers a slew of offline and automatic browsing options. Its ability to save entire pages or sites—resulting in one double-clickable document—is fantastic for archiving or browsing offline. It also features side tabs, which slide out for favorite sites; channels (configurable feeds of information from Web sites); history (where you've been recently); and search options.

Overall, Internet Explorer is a solid Web suite that offers access to the latest Internet technologies without hogging your system's resources.—*Scott Love*



NEW FEATURES of Internet Explorer include handy side tabs and a clean, customizable interface.

Explorer and Communicator What's the Difference?

	Explorer	Communicator
INTERFACE & PREFERENCES		
Offline browsing (save as)	yes	no
Back & Next buttons with history	yes	no
Languages supported	9	11
WEB STANDARDS SUPPORT		
Channel support (Microsoft feature)	yes	no
Document Object Model support	yes	no
Dynamic positioning	yes	layers only
AUDIO & VIDEO		
Video-streaming support	yes	no
VRML 2.0	no	yes
MPEG	yes	no
JAVA & SCRIPTING		
JavaScript	ECMA Script	JavaScript 1.2
Pluggable Java virtual machines	yes	no
SECURITY		
Security zones	yes	no
Permissions-based Java security	no	yes
PICS rating system support	yes	partial
View and edit cookies	yes	no
MAIL SUPPORT		
S/MIME encryption support	no	yes
Multiple mail accounts & servers	yes	partial
Search mail on server	no	yes
DEVELOPMENT		
Web-page authoring	no	yes

GOOD NEWS: Free. Offline browsing.
Low system requirements. BAD
NEWS: Slow performance. Buggy.



Elastic Reality 3.1

GRAPHICS & SOUND

DEVELOPER: Avid Technology

CONTACT: 800-949-2843 or 978-640-6789 (international), <http://www.avid.com>

PRICE: \$1,299 (SRP)

REQUIREMENTS: PowerPC (604e- or G3-based Mac recommended), System 7.5.1 or later, 16MB of RAM (32MB of application RAM recommended), 8MB of free hard disk space, QuickTime 2.0 or later, CD-ROM drive

Morphing is a special-effects technique that creates a smooth, controlled transformation of one image or movie into another. Ask Industrial Light and Magic how it put new words in JFK's mouth in *Forrest Gump*, or Digital Domain how it did the past-to-present time transitions in *Titanic*. They used Avid's masterwork, Elastic Reality.

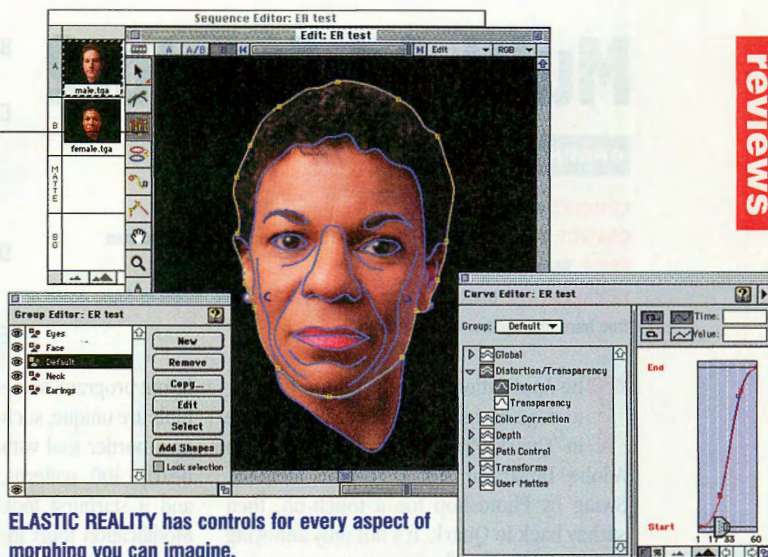
In addition to morphing, Elastic Reality is equally suited to warping (essentially the same as morphing, except it uses only one image or movie), mask creation, and even color correction. ER's ability to link the motion paths of several outlines, or shapes, in which some shapes add the motion of others to their own, also puts 2D animation programs such as Adobe After Effects to shame.

The source of Elastic Reality's power is its shape-based morphing and warping system. You use Bézier splines to outline important areas of an image, such as the

eyes and nose of a face. You achieve morphing by linking shapes between two images—the A-roll and the B-roll—and fading between them as they deform.

You can layer and associate shapes in various combinations, providing tremendous control over the transformation. Each shape can have its own animation path. You can also stack shapes in groups, allowing some shapes to pass in front of or behind others. Stack your shapes correctly, and a morphing chin can pass in front of the neck without distortion.

New to version 3 is a snap-to-edges tool that automatically snaps a path to the edges it detects in the underlying image. It works well for simple shapes with distinct edges, but it has an annoying habit of creating control points whenever the mouse changes dir-



ELASTIC REALITY has controls for every aspect of morphing you can imagine.

ection, producing strange, squiggly edges.

We were surprised at Elastic Reality's shallow learning curve. The program's interface is uniform, comprehensive, and easy to understand, despite a bewildering number of options in some of its floaters.

If you're doing any kind of video, film, or print work that requires you to distort an image in an organic way, you absolutely need Elastic Reality.—Raf Anzovin

GOOD NEWS: Great shape-based morphing and warping. Hierarchical motion paths for shapes. Shape layering. **BAD NEWS:** Autotracing tool works unpredictably.



Morph Power to You

A basic face morph in Elastic Reality is surprisingly easy.



1 Set up shapes that outline the major facial features of the person in each image. Pay attention to more than just the nose, eyes, and ears.

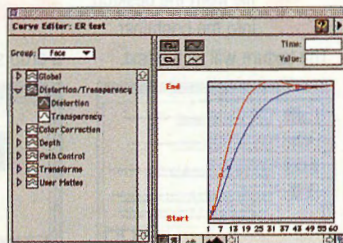


2 Using the correspondence tool, link the shapes together. Most of the time, Elastic Reality does a pretty good job of creating a one-to-one correspondence between shapes.



3 Group the shapes. This ensures that foreground objects will morph in front of background objects. The woman's earrings, for instance, will appear from behind her ears.

4 You can alter transparency and distortion curves independently. Here, the lip layer curve is altered to morph before any other element.



5 Choose Render from the Render menu, and your morph is done.





reviews

Multi-Ad Creator2

GRAPHICS & SOUND

COMPANY: Multi-Ad Services

CONTACT: 800-245-9278 or 309-692-1530, <http://www.multi-ad.com>

PRICE: \$649 (SRP)

REQUIREMENTS: 68040 or faster, System 7.5.3 or later, 16MB of RAM, 40MB of free hard disk space, CD-ROM drive

The Application Dance is all too familiar to page designers. Start creating a page in QuarkXPress. Then waltz over to Adobe Illustrator for a graphic element. Swing by Photoshop for a touch-up, then sashay back to Quark. It's not only annoying to switch between three or more expensive, RAM-hungry programs to complete a single page; you also have to learn the quirks of each application. Multi-Ad Creator2 smooths out the workflow by combining premium layout abilities with illustration and image-manipulation tools.

To start with, Creator2 has excellent typographical controls and great style implementation. Besides the usual character and paragraph styles, you can create Style Models, which let you consolidate multiple character and paragraph styles into a single style, and Element Styles, which record everything you've done to an object. Creator2 resurrects the precise type-spec controls of QuickDraw GX (it installs one extension to enable this), letting you tweak your type to your heart's content. The copy-fit command automatically scales the text to fit it inside a text block.

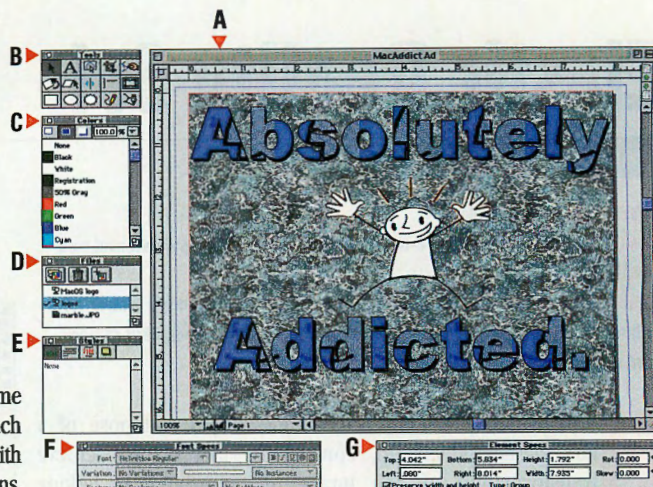
The program comes with a decent assortment of drawing tools, including the usual line, oval, freehand drawing, and rectangle tools. A path tool lets you add control points as needed. Because Creator2 was developed originally as a display-advertising

layout program, some tools are unique, such as a border tool with nearly 400 patterns, and a starburst tool. Modification tools include crop, reshape, rotate, flip, and skew.

Instead of picture boxes, Creator2 uses a containment tool, which lets you turn any drawing object or text into a container holding any graphic, text, or both. There's also a nice Auto-Mask feature, which snips out the background of imported graphics. Other than this feature and good control over gradient fills and drop shadows, Creator2 doesn't have much in the way of manipulation abilities for bitmapped graphics. At the least, Multi-Ad should consider adding some control over levels and color balance.

Many features set Creator2 apart from its better known competitors. The program has virtually unlimited undo and redo. You can have multiple page sizes within one document—a great feature for producing an ad in several different sizes. You can also view CMYK and spot color separations on screen rather than printing them out. Creator2 is not only scriptable but also recordable via AppleScript, making it much easier to automate repetitive tasks.

With all of Creator2's capabilities, the



THE DOCUMENT WINDOW (A) is where the main action is. On the left side you'll find palettes for tools (B), colors (C), the files (D), and styles (E) you're using in your project. Below you'll find windows where you can modify font (F) and element (G) specifications.

things it doesn't do are surprising. You can't bind text to a path, and there's no easy way to make drop caps or small caps. You can't edit text by dragging and dropping. The program relies on MacOS Easy Open for file translations, so if you want to import text from a word processor, you have to make sure you've installed the appropriate MacLink Plus translator. If you need to create long documents, Creator2 isn't the right tool for you. It's meant for shorter documents like ads or brochures and lacks tools for creating indexes or tables of contents.

Creator2 is no replacement for Illustrator and Photoshop. But if you work with shorter documents, it could prove a worthy alternative to QuarkXPress.—Tom Negrino

GOOD NEWS: Terrific layout abilities and typographical controls. Great style sheets. Good illustration tools.

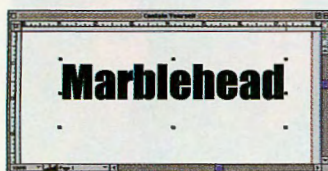
LOTS OF WHIZZY FEATURES. BAD NEWS: Can't create text on a path. Not good for long documents.



Contain Yourself

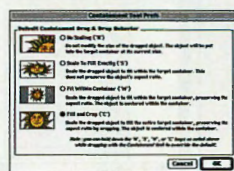
Creator2's containment tool lets you place any element inside any other element. Here's how we used it to fill some headline text with a JPEG texture file.

1 First drag out a text box with the text tool, then type in your text and spec the type for font, style, and size.



2 Next choose Convert Text to Paths from the Elements menu, which will create a hollow copy of the type. You could get rid of the original type at this point, but we'll keep it around for later use.

3 Drag the JPEG texture file from the desktop into the container. The texture will fill the text.



4 Now reposition the container so it's riding on top of the original black text, which now serves as a drop shadow.





This EPS image was printed on an inkjet **without** StyleScript



This EPS image was printed on an inkjet **with** StyleScript

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Claris Home Page

DEVELOPMENT

COMPANY: FileMaker, Inc.

CONTACT: 800-544-8554 or 408-987-3900, <http://www.clarishomepage.com>

PRICE: \$99 (SRP); \$49 upgrade

REQUIREMENTS: 68020 or faster, System 7.1 or later, 12MB of RAM, CD-ROM drive

The latest version of Claris Home Page earned the number two spot on FileMaker, Inc.'s product list—second only to namesake FileMaker Pro—and thus survived the dissolution of Claris. Deemed worthy of existence, Home Page provides easy Web-page authoring and, with this new upgrade, accessible integration with FileMaker Pro.

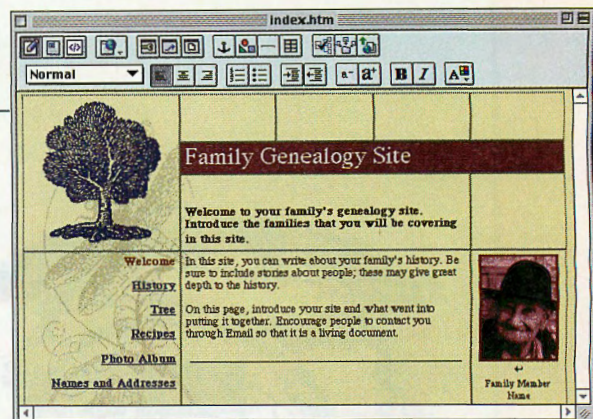
Home Page takes care of basic HTML editing and does so with a fairly mellow learning curve. People familiar with simple word processors will feel at home with Home Page and learn the quirks and traits of Web-page design quickly. This ease of use, however, sacrifices professional design features. Its Edit HTML Source mode, for example, offers nothing over SimpleText and doesn't hold a candle to editors such

as Bare Bones Software's BBEdit and GoLive CyberStudio. And for those with sites spanning hundreds or more pages, Home Page is probably not the right tool to use.

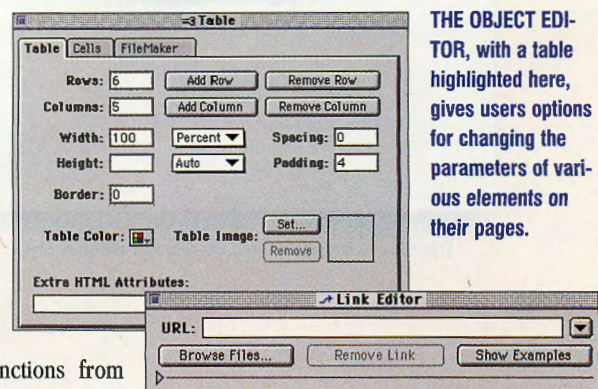
The best addition to Home Page 3.0 is its FileMaker Connection Assistant. Linking a FileMaker Pro database to a Web site can be a complicated process requiring users to learn CDML—the text-markup tags that enable you to access FileMaker functions from within Web pages. Home Page removes that necessity with the Connection Assistant and provides an easy step-by-step guide for linking a database to a Web site. Overall, the Connection Assistant is clear, complete, and genuinely helpful. Posting a FileMaker database to the Web becomes as easy as painting by numbers.

Home Page features several other new

Assistants that vary greatly in worth. The Frame Assistant offers little to experts or novices. The Site Assistant, on the other hand, provides global page attributes, link checking, and other helpful features. Additional Assistants include site builders for newsletters, personal pages, and so on, that walk you through building customizable generic sites. The Assistants function as miniapplications that you can gradually give up as you become adept at



CLARIS HOME PAGE 3.0 makes building Web sites easy with a straightforward WYSIWYG page editor.



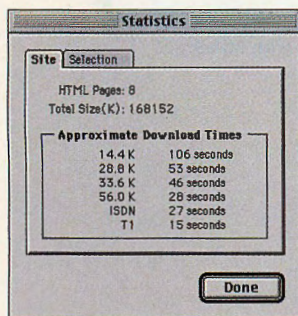
THE OBJECT EDITOR, with a table highlighted here, gives users options for changing the parameters of various elements on their pages.

using Home Page to build Web sites. They're an interesting approach to an application and work well, despite their quirky user interfaces.

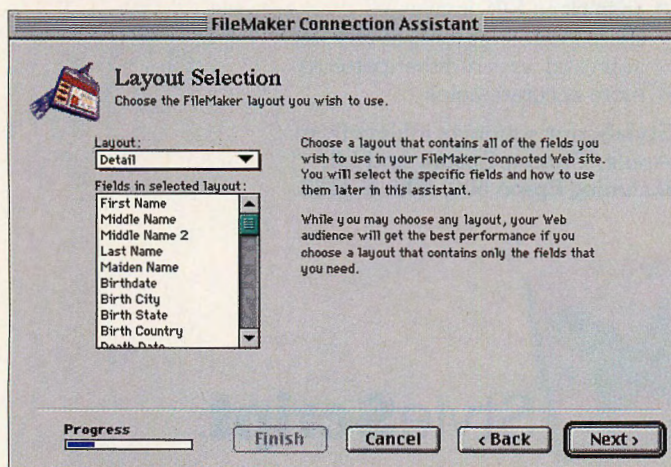
Other features new in 3.0 include FTP (File Transfer Protocol) functionality, which enables Home Page to upload your site once it's ready. One brilliant addition—lacking in many high-end tools—is the ability to upload only those files that have changed since the last posting. To fix a broken link on your site with Home Page, you only have to upload one page.

Claris Home Page 3.0 makes it easy for people who don't know a </P> from a
 to create decent Web sites. Purists may thumb their noses at WYSIWYG editors, but they will drool at Home Page's easy FileMaker Pro integration. It's the ease of use that the old Claris was famous for.—Scott Love

GOOD NEWS: Useful new FileMaker Connection Assistant. Good FTP features. Easy to use. **BAD NEWS:** Poorly done Frame Assistant. Weak HTML Source editor.



ONE HANDY TOOL in the Site Editor gives would-be Webmasters an idea of how big their pages are for downloading.



THE REAL MEAT in this 3.0 upgrade is connectivity with FileMaker Pro databases. This Assistant guides you step-by-step in linking a database to a Web site.

Hard Disk ToolKit 2.5
Now Shipping!

OH NOOOOOO!

We've upgraded to
MacOS 8.0! And now
the boss wants stronger
security, crisis control, and
assurance that our data is safe.



But wait...

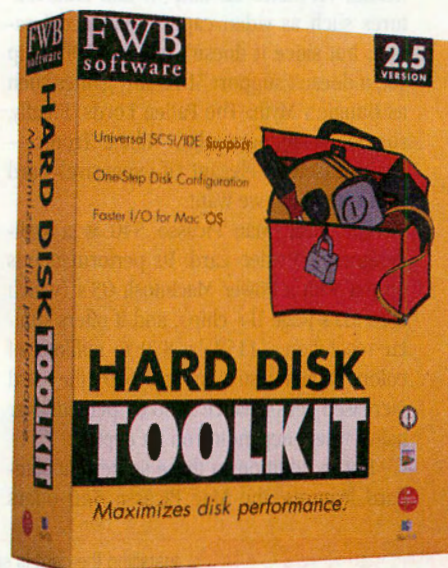
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performance or compatibility issues!

And, I get master password protection,
bullet-proof encryption, S.M.A.R.T.
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reviews

Mac Picasso 540 with 3D Overdrive

HARDWARE

COMPANY: Village Tronic

CONTACT: 800-932-6442 or 610-586-5704, <http://www.villagetrionic.com>

PRICE: \$199.95 (Picasso 540), \$399.95 (3D Overdrive), \$549.95 (bundle)

REQUIREMENTS: PCI-based Mac

PLUG THE VIDEO-IN and -out and TV tuner solutions into these pins.

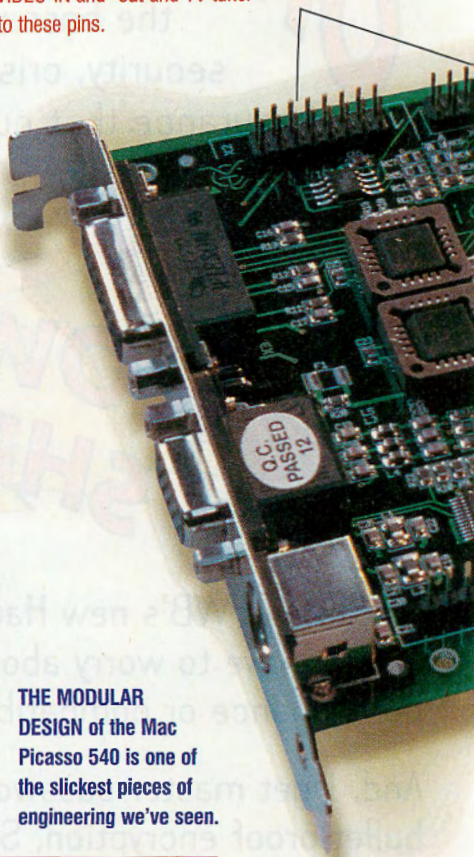
We always seem to find shortcomings with video cards. The TechWorks Power3D card, with its powerful and popular 3Dfx Voodoo chip set, can't mix 2D and 3D spaces, making the card unsuitable for anything but gameplay. ATI's Xclaim VR mixes 2D and 3D and adds features such as video capture and acceleration, but since it doesn't use the 3Dfx chip set, it doesn't support 3Dfx-only games such as Bungie's *Myth: The Fallen Lords*. Finally, someone—in particular, Village Tronic—has released an elegant (if expensive) card with everything we want.

The basic Mac Picasso 540 is a well-designed 2D video card. Its performance is on par with a Power Macintosh G3's (which uses ATI's Rage II+ chip), and it offers similar resolution—1152 by 870 in millions of colors. When tested in an 8600, the card increased performance 20 to 67 percent over native video, depending on bit depth.

But in addition to these somewhat standard features, the Mac Picasso 540 offers

several unique 2D innovations. First of all, the card offers many more refresh rates at various resolutions—all the way up to 160Hz at 640 by 480. And even slicker is the Screen Doubler feature, which allows a standard monitor to act as a portrait. Use the 640 by 960 or 832 by 1248 resolutions, then just rest your mouse at the bottom of the screen, and the view scrolls. Since the scrolling is all done in hardware, it's much faster than scrolling through a window with a scroll thumb. (Use the resize button to make your documents take advantage of the new size.)

Village Tronic wrote a new Monitors control panel, called Monitors and Picasso, that offers more control over monitor settings than does Apple's standard control panel. You can use it to do all the mundane tasks such as rearranging multiple monitor positions and changing bit depth and resolution (hold down the option key while changing resolution to add refresh rate as a sub-menu). But you can also shift the screen

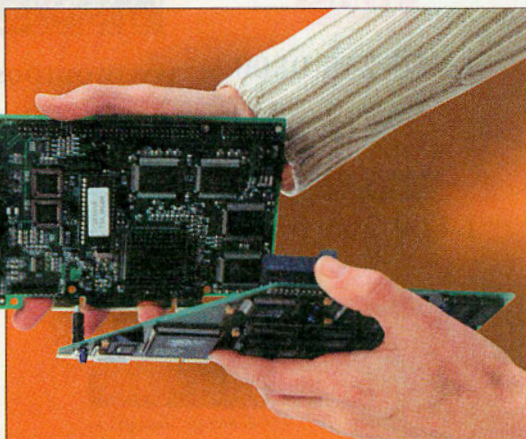


THE MODULAR DESIGN of the Mac Picasso 540 is one of the slickest pieces of engineering we've seen.

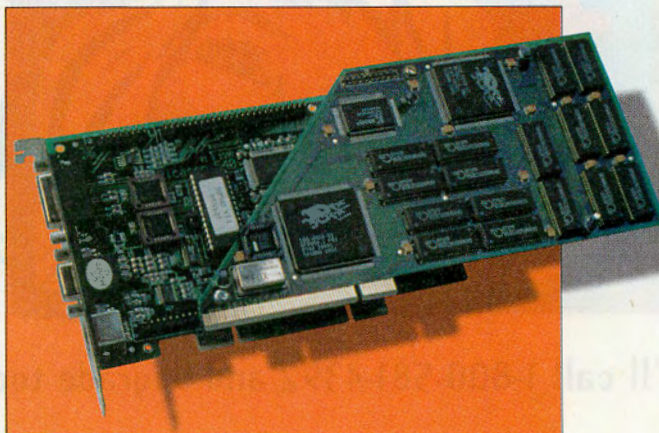
Easy as Pie

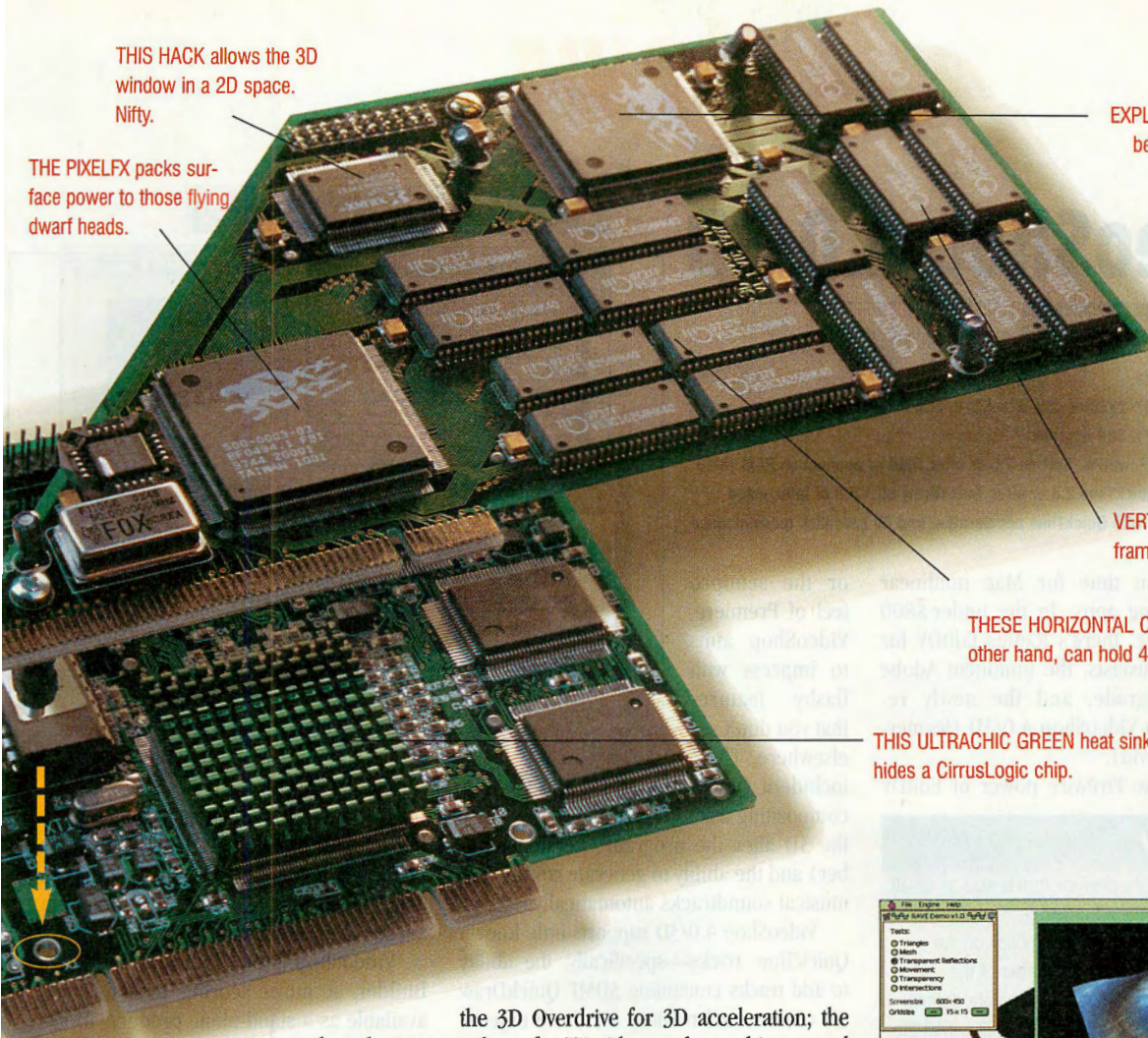
Installing the card is so simple, you hardly need directions. Basically, stay away from large bodies of water, unplug your Mac, and wash your clothes with static guard before touching the card.

1 After removing the cards from the bubble wrap, just line up the screw with its post and the pins with their port; then press the two cards together.



2 Presto! After tightening the screw, you've got a 2D/3D rendering machine. And look, there's plenty of room for a video-out card to fit against the 3D overdrive module.





THIS HACK allows the 3D window in a 2D space. Nifty.

THE PIXELFX packs surface power to those flying dwarf heads.

EXPLODING DEMONS look even better when they're rendered with the TexelFX's textures.

VERTICAL CHIPS offer 4MB of frame-buffer storage.

THESE HORIZONTAL CHIPS, on the other hand, can hold 4MB of textures.

THIS ULTRACHIC GREEN heat sink hides a CirrusLogic chip.

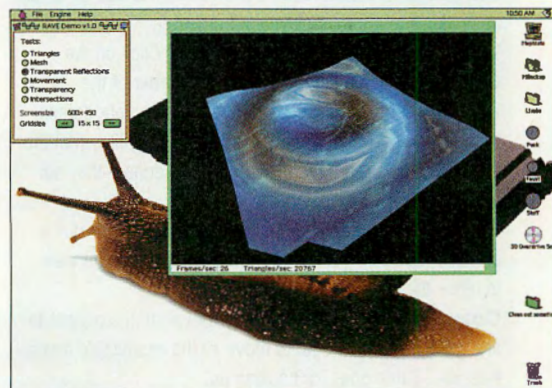
around and control your monitor's timings down to the hertz. The panel works even when the card isn't installed.

By itself, the 540 is a reasonable way to get accelerated video if you don't have a G3, or to add a second monitor if you do. But the Picasso isn't a stand-alone product. Its modular design allows for the addition of

the 3D Overdrive for 3D acceleration; the Paloma for TV, video, and sound input; and the Pablo Video-out module (the Picasso has an S-Video-out connector, but you need the Pablo to use it).

The 3D Overdrive module offers the best 3D acceleration available on the Mac today. The card uses the same 3Dfx chip set as the Power3D card—a PixelFX chip for surface drawing and a TexelFX chip for texture drawing—but three features provide superior performance. First, the card has 8MB of memory—twice as much as the Power3D—which allows it to fully render 3D spaces in resolutions up to 1600 by 1200 (at thousands of colors); the Power3D is limited to 640 by 480. Village Tronic is already working with the Mac developers of Epic Megagames' Unreal to ensure that the much-hyped, first-person shooter game will run at a huge resolution (bigger than the PC version's!).

The second attribute the Picasso wields over the Power3D is the Picasso's ability to support 2D and 3D simultaneously. The 3Dfx chip set wasn't engineered to mix 2D and 3D, but Village Tronic designed a custom chip to act as a 2D/3D bridge. So, as with ATI's Xclaim VR, you can use the card to accelerate 2D/3D applications such as rendering programs. And for the icing on the cake, you



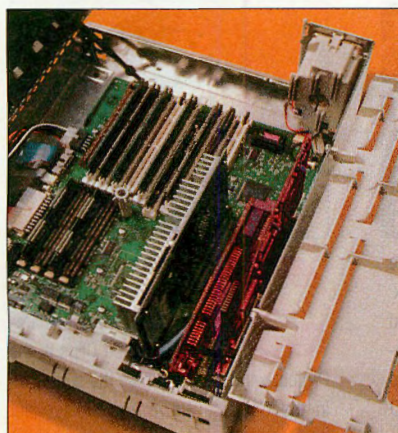
YOU WON'T SEE THIS with a Power 3D card—a 3D window inside a 2D desktop.

don't need a pass-through cable as you do with the Power3D—the 3D Overdrive module plugs directly into the Picasso video card.

Of course, all this great German engineering isn't cheap. At \$550, the card is perfectly reasonable if you're an artist who wants to play games, but you'll have to spend a few hours rationalizing the purchase if you're not.

Don't fret for too long; the Picasso's 2D/3D mix combined with 3Dfx technology makes for great all-around graphics acceleration. This card won't disappoint you.—Kathy Tafel

3 It's a little tricky getting the unit into your Mac—you need to be careful to exert even pressure on both cards to get them sitting properly in their slots.



All photos by KB

GOOD NEWS: Best 2D/3D combo available. Innovative engineering. Nifty control panel. You can play Myth with it. **BAD NEWS:** A tad pricey.





VideoShop 4.0/3D

GRAPHICS & SOUND

DEVELOPER: Strata

CONTACT: 800-787-2823 or 435-628-5218, <http://www.strata.com>

PRICE: \$495 (SRP); \$89 upgrade

REQUIREMENTS: PowerPC, System 7.5 or later, 5MB of application RAM (8MB recommended), QuickTime 2.5 or later, QuickDraw 3D 1.5.3 or later, video input/output card with QuickTime acceleration and AV hard disk recommended

It's a boom time for Mac nonlinear video-editing apps. In the under-\$800 realm alone, there's Radius EditDV for Firewire enthusiasts, the imminent Adobe Premiere upgrade, and the newly revamped Strata VideoShop 4.0/3D (formerly owned by Avid).

Lacking the Firewire power of EditDV

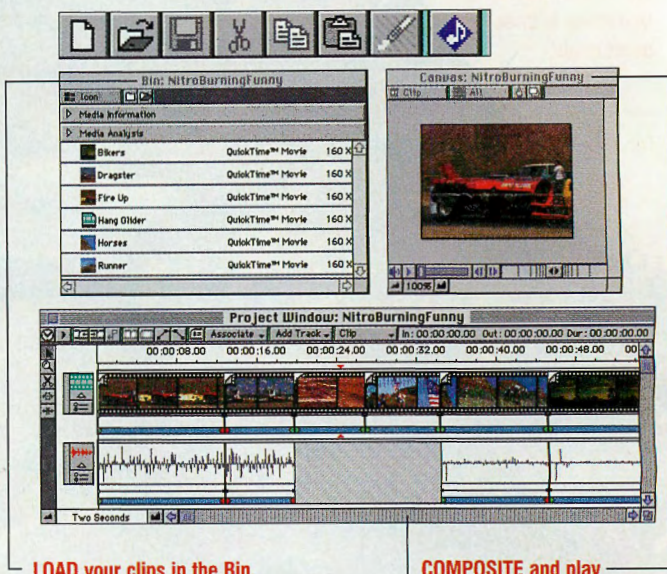
or the semipro feel of Premiere, VideoShop aims to impress with flashy features that you don't see elsewhere. These

include a QuickDraw 3D compositing track (hence the 3D after the program's version number) and the ability to generate royalty-free musical soundtracks automatically.

VideoShop 4.0/3D supports little-known QuickTime tricks—specifically, the ability to add tracks containing 3DMF QuickDraw 3D objects, and motions for those objects. For example, you can import a spinning cube and map a video clip onto it—something no other digital-video program anywhere near this price range can do. Note, however, that VideoShop itself doesn't create 3D objects or motions—Strata wants you to do that in StudioPro, the company's 3D animation program—and mapping control is fairly limited. You can't map a

different video track onto each face of the cube, as you can with a high-end digital-video system, or even adjust the mapping position, as you can with a true 3D program such as StudioPro.

VideoShop now incorporates Tune Builder, a movie-scoring tool formerly available as a stand-alone product. To use TuneBuilder, select a TuneBuilder-enabled song from the included disc (you can purchase a variety of additional songs from a library licensed by Airworks, 800-525-5962) and specify the duration you need. You can generate as many versions as you want, each of which will be the proper length and have a musically coherent opening, body, and ending. Finished clips are



LOAD your clips in the Bin.

EDIT THEM in the Project window.

COMPOSITE and play them on the Canvas.

Video Viability

Shrink the risk: Set the preview movie size as small as possible to improve playback frame rate.

Wax the tracks: Too many tracks? Click on the Collapse Tracks icon in the upper right corner of the Project window to squeeze more tracks onto your screen.

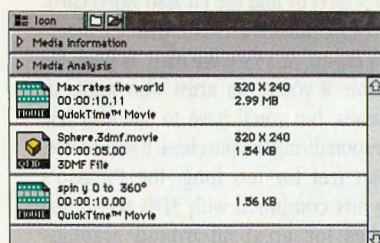
Toss the moss: Trash TuneBuilder song files (not the AIFFs you make from them) when you're done—they eat up disk space.

Skew the view: Use the Storyboard view for quick-and-dirty assembly of a movie; then switch to Time view to refine the edits.

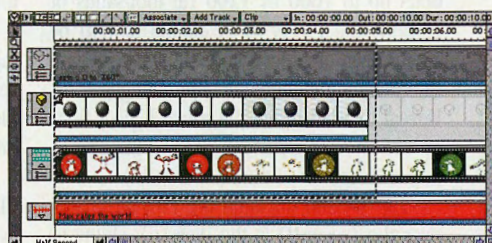
Compile the files: If you're transferring a project to another Mac, don't forget to move all the associated media files, too. Same goes for backing up.

Mobile Video Map

Just how often are you going to need to map video onto a spinning 3D sphere? Don't ask us, but VideoShop's 3D tracks and animated clip objects make it pretty easy to do. Here's how:



1 Open a new project. Import a video clip to the Bin (we used Max as our clip). Import the file Sphere.3dmf movie (OK, it looks more like an egg than a sphere) in the 3D Objects folder on the VideoShop CD. And import the Tween motion path file called Spin y 0 to 360°.



2 You'll need a Video track (there'll already be one in the Project), a 3D track, and a Tween track. Add the 3D and Tween tracks using the Add Track command from the Project menu. Position them directly above the Video track. Drag the video clip from the Bin to the Video track. Drag the 3DMF file to the 3D track, and the Tween path file to the Tween track.



3 Drag-select across the Video, 3D, and Tween tracks. Choose Associate-Attach Selected Clips in the Project window. Then play the sequence in the Canvas. We've just created our very own Max video egg!

saved as AIFFs and can be imported into a VideoShop audio track. The whole process is nearly effortless, but there are two catches: you're limited to the TuneBuilder song library, which is very business-oriented (and rather bland); and scoring this way gives you a generic "bed" of sound, not a real score that follows the action of the video. Still, a TuneBuilder score is better than stealing something off a CD, or worse, having no music at all.

More important than these high-visibility features are VideoShop's basic editing tools. The program adeptly assembles bread-and-butter, cuts-only movies. You get unlimited audio and video tracks, the ability to drag and drop media from the Bin (where you store imported clips) to the Project window, and VideoShop's timeline. Stretch and trim tools let you fine-edit individual clips. And you get real-time previews, something Premiere users have been pining for since version 1.

VideoShop also offers better special-effects tools and filters than Premiere does (Adobe deliberately shortchanges these areas of Premiere so folks will buy After Effects). VideoShop ought to serve anyone whose special-effects needs aren't too rigorous. For example, in the Canvas window, which looks like a simplified After Effects Comp window, you can layer multiple tracks, move clips along keyframed paths, add scrolling titles, and do simple dynamic mesh warp and morphing effects. You can also apply dynamic filters to a range of frames within a clip; to do that in Premiere, you have to break the clip into two or more pieces first. Unfortunately, VideoShop's own filter plug-in API is not compatible with third-party Premiere or After Effects filters (although it does support Photoshop filters). Nor does it import Photoshop images with layers or alpha channels intact, or, for that matter, generate alpha channels on its own (essential for sophisticated compositing).

Strata VideoShop 4.0/3D may not boast the power (nor the \$1200-plus combined street price) of Premiere and After Effects, but not everyone needs that much. As the Mac's only all-in-one editing, special-effects, and music-scoring studio, VideoShop is a real steal.—Steven Anzovin

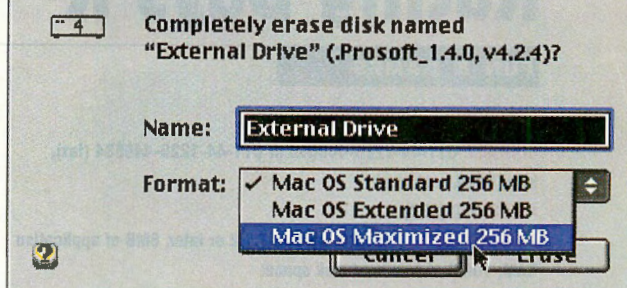
PlusMaker 1.0.1 and PlusMaximizer 1.0

DISK & FILE

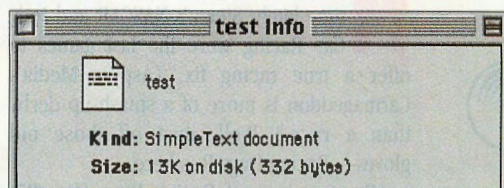
COMPANY: Alsoft
CONTACT: 800-257-6381 or 281-353-4090, <http://www.alsoftinc.com>
PRICE: \$29.95 each (street), both for \$39.95
REQUIREMENTS: 68040 or faster, System 8.1

With Mac OS 8.1, Apple introduced HFS+, a hard disk formatting option that lets large hard disks use smaller allocation blocks. An allocation block is the smallest piece of a drive that a file can occupy; under the older HFS Standard formatting, even the tiniest file on a 4GB hard disk occupied 65K. Multiply that 65K by thousands of files and imagine the wasted space. Many people partitioned their hard drives to avoid some of that waste. With HFS+, however, files took up as little as 0.5K, even on large drives.

Apple's default HFS+ formatting does not take full advantage of HFS+'s 0.5K potential and creates 4K blocks, still wasting some space. It also requires a full backup, reformat, and restore to implement. Enter Alsoft's PlusMaker and PlusMaximizer.



MAC OS MAXIMIZED creates 0.5K blocks rather than Apple's 4K blocks.



UNDER THE OLDER HFS formatting, even an empty SimpleText file occupies 13K on an 850MB hard disk.

Install the PlusMaximizer extension and a new option appears in the Finder's erase disk dialog—Mac OS Maximized. This option reformats the drive using 0.5K blocks. Formatting our hard drive with this option was nearly instantaneous.

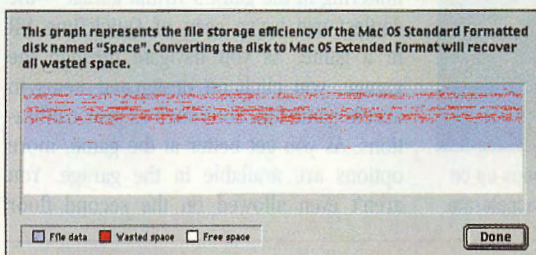
PlusMaker also creates 0.5K blocks, but it adds the advantage of converting a hard drive to HFS+ without requiring you to erase the disk and restore the data.

PlusMaker took about a half hour to convert our 1.1GB drive, and it left the data completely intact. We freed up a whopping 215MB, about 32MB more space than if we'd used Apple's 4K block size. Your mileage will vary.

It's been rumored that the 0.5K block size can degrade

the performance of a drive. Our benchmarks were inconclusive, with activity slowing as much as 5 percent sometimes and speeding up the same amount other times. We certainly could feel no difference.

PlusMaximizer will free up more space than Apple's HFS+ formatting, but if you just dread erasing and reformatting drives, PlusMaker is the answer you're looking for.—Joseph O. Holmes



DON'T LET YOUR hard drive get cluttered with red scratches of wasted space.

HFS+ Warnings

Neither Norton Utilities nor any other third-party utility can yet repair an HFS+ disk, though Apple's Disk First Aid 8.1 can.

An HFS+ disk cannot be read from a Mac running any system earlier than OS 8.1.

Be sure to make a bootable floppy with Apple's Disk Tools PPC, available from Apple's FTP sites.

GOOD NEWS: Loads of special effects. 3D tracks. Automatic sound-track scoring. Real-time previews. Excellent value. **BAD NEWS:** Not compatible with Adobe Premiere or After Effects filters. Limited adjustability of most special effects. You can't make your own TuneBuilder songs.



GOOD NEWS: Reclaims more space than Apple's formatting. No need to erase and restore (PlusMaker). **BAD NEWS:** HFS+ isn't well supported yet.





reviews

Racing Days R

FUN & GAMES

COMPANY: Feral Entertainment

CONTACT: 011-44-1225-448069 or 011-44-1225-446534 (fax),

<http://www.feral.co.uk>

PRICE: \$50 (SRP)

REQUIREMENTS: PowerPC, System 7.1.2 or later, 8MB of application RAM, 10MB of free hard disk space.



THE FINISH LINE WON'T STOP YOU from playing this game over and over.

Mac auto-racing nuts have had a tough time lately. Sierra's NASCAR and Indy Car Racing were the last games to offer a true racing fix. (Aspyre Media's Carmageddon is more of a smash-up derby than a race.) Well, dust off those old gloves—Racing Days R is here.

Our previews of Racing Days (Dec/97, p54) and Racing Days R (Mar/98, p90) in PowerPlay didn't quite capture how very cool this game is. First of all, Racing Days R's interface is a huge improvement on the beta we played of Bandai's Racing Days. And the game no longer suffers from poor

Japanese translation and inconsistent dialogs and options.

The latter improvement is probably a result of Feral Entertainment's picking up Racing Days R from the Japanese developers to publish the game in Europe. The company localized the game to British English, French, and German. That's right, you lucky Quebecois, you can play this game in your native language! Feral is selling the game direct from the UK and should have arrangements with print and online catalogs by the time you read this.

Being a Mac game, Racing Days R has an intuitive, well-thought-out interface. A help screen on the upper right provides contextual information about various options and features (when you've mastered the game, you can play an animation in that box instead). On the main screen, you start by tinkering in the game's virtual garage—the coolest use we've seen of QuickTime VR in a game. As you navigate through the garage, you click on designated items to access game functions such as gear calibrations. As you get better at the game, more options are available in the garage. You aren't even allowed on the second floor

until you reach a certain proficiency. Slick!

These gadgets would be sheer gimmickry if the game weren't great, too. There are only three tracks, but each is stunningly beautiful—rivaling the graphics of games such as San Francisco Rush for Nintendo 64. We loved playing Racing Days R on our Power Mac G3, but you can scale it to any Power Macintosh. The options for changing the visual settings are fairly basic, yet even here the game adds a nice touch: profiles of various Macs via a pop-up. Pick the Mac closest to your own and hit the streets.

But wait, that doesn't say anything about gameplay! Driving provides the thrill you get from top arcade games. A tutor tells you when to push which pedals, but we'll give you the gist of what she says: Brake *before* entering a curve, and accelerate *out* of a turn. Oh yeah, and you can play online against as many as eight other people. —Kathy Tafel



AN UNOBTRUSIVE RACING TUTOR pops up on the lower left to tell you to brake or accelerate.

GOOD NEWS: Mac only. Completely Mac interface. Beautiful graphics. Innovative use of QuickTime VR.

BAD NEWS: Racing tutor a little sketchy.

Can't immediately replay track with same options.



Paint Shop

In the Racing Days R garage (a brilliant use of QuickTime VR), you can customize your car. As you progress in capability, more options become available. Here is one of the easiest choices.



1 From the get-go, you can customize the look of your car by clicking on the paint. I decided to add my initials to my car.

2 Since the draw tools are the standard Mac palette, it's easy to just click and go. You can also import PICTs to use as fill patterns.

3 The end result is a car that no one will mistake for anybody's other than mine (unless your name is Kausin Trubble). Don't do something lame and just copy me—there are much more creative ways to customize.

reviews

Shattered Steel

FUN & GAMES

COMPANY: Logicware
CONTACT: 888-564-4245 or 626-858-2376, <http://www.logicware.com>
PRICE: \$39.95 (street)
REQUIREMENTS: PowerPC, System 7.5.3 or later, 16MB of RAM, CD-ROM drive, 13-inch color monitor



In the future, feuding interplanetary mining corporations employ mercenaries. These warriors-for-hire strut across the alien terrain in heavily armed Planet Runners—walking machines suited to hostile conditions and swift attack. As one of the Mercs, you land for a routine assignment but find something entirely different. The machines attacking this outpost are an insectoid/mechanical hybrid whose agenda is unknown. Mission briefings tell you more about this cybernetic race (the Tergs) and its plans for humankind.

Backing up this premise is one really cool graphics engine. The texture-mapped terrain and structures are rich and varied, and the lighting effects—spotlights scan and swoop—are outstanding. The graphics might be a bit pixelated for some tastes, but the impending release of a patch for ATI 3D cards should remedy that.

While graphically superior to Activision's

BLAST YOUR ENEMIES from the cockpit of a massive walking tank.

genre-defining MechWarrior 2, Shattered Steel offers simpler, point-and-shoot action. If MechWarrior was a flight simulator with legs, then Steel is a pneumatic Doom. It is purely a matter of taste whether you view this as a benefit or a shortcoming.

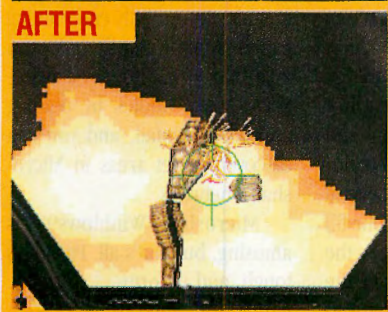
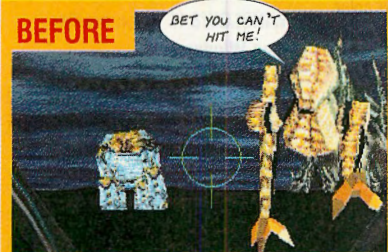
The missions in Shattered Steel are exciting but uneven—often an infuriatingly difficult mission will follow a ridiculously simple one. Maybe that's life, but it doesn't make for great gameplay. The game does allow you to make mission choices that have an impact on future assignments; take time to save some colonists, and another mission's undefended enemy convoy will receive reinforcements. In all, the missions are good enough to keep the game exciting but will need improvement in future incarnations.

Shattered Steel's only glaring weaknesses are in its user-friendliness. The sketchy manual isn't much more than a technical guide to each type of Planet Runner. Adding to the problem are a hard-to-find save system (it's labeled Cryochamber) and a preference-setting interface that hides important controls.

The game has these faults, and it won't appeal to players seeking a deep, complex simulation, but if gigantic walking tanks are your bag, Shattered Steel is worth a look. It delivers good, clean action.—Greg Kramer



FIND A DEMO of Shattered Steel on The Disc.



WE'RE NOT SURE what you were, but you're definitely dead now.

GOOD NEWS: Excellent graphics and lighting effects. Good action. **BAD**

NEWS: Missions are a mixed bag. Inadequate manual. Simplistic scenario.



“Simplicity is the ideal of all logical thinking...”

Ockham's Razor
 (William of Ockham: 1285 - 1349 AD)

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A Bronx Family Album

THAT'S INFOTAINMENT

COMPANY: Scalco Publishers

CONTACT: 212-271-0700

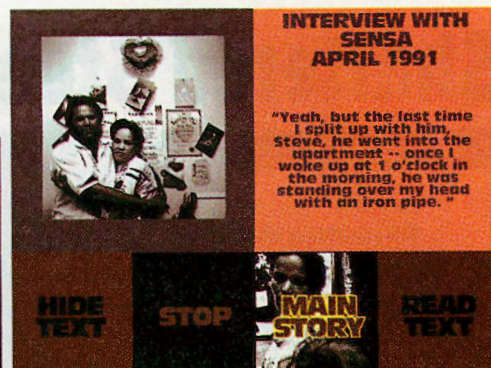
PRICE: \$34.95 (SRP)

REQUIREMENTS: 68040 or faster, System 7.1 or later, 5MB of free RAM, 2X CD-ROM drive, 640-by-480-pixel monitor with 256 colors or better (thousands of colors recommended)

It's not exactly what you'd call entertainment, but A Bronx Family Album is an enthralling story presented with elegance and compassion. In seven years' worth of photos, photographer Steve Hart tracks the ups and downs of an extended family and its struggles with AIDS, drugs, and poverty. Hart feels that chronicling the experiences of a single family over the years will be more compelling than generalized

facts and figures or anonymous snapshots, and he's right.

The main story takes the form of a slide show, in which Hart goes through his photos in chronological order describing the events and individuals in each picture. The pictures are cross-referenced and feature audio excerpts from inter-



PHOTOGRAPHER STEVE HART follows one family's troubled lives.

views with the principals. A photographic timeline provides an accessible overview. To round out the package, there's also an index of AIDS service organizations, listed by region. Fundamentally, A Bronx Family Album is a straightforward narrative of words and pictures that prove touching, distressing, and absorbing.—MS



ComicBase 3.0.2

COMPANY: Human Computing

CONTACT: 408-266-6883,

<http://www.human-computing.com>

PRICE: \$129 (street)

REQUIREMENTS: 68020 or faster, System 6.0.7 or later, 4MB of RAM (5MB with System 7)

ComicBase, a price guide and database collector's tool, aims to ease comic book collecting by providing data on more than 3,000 comic titles. This includes pricing, stories, YUP, THAT'S a batter-fried rat.

cover art, and occasionally movies. Collectors can enter their own collections into the database and download updated pricing information from Human Computing's Web site.

ComicBase functions well as a price guide: just look up a title with the Find Comics button, and you have it. The problems occur when you're entering information about a collection—especially a large collection. You'd better have the manual on hand for such record keeping, or even for changing records or generating a report of how much your collection is worth—navigating this interface really sucks. Once you've got the program's idiosyncrasies under your belt, however, ComicBase does a nice job of keeping track of your collection.—DR



Microshaft Winblows98

COMPANY: Parrot Interactive

CONTACT: 800-910-2696,

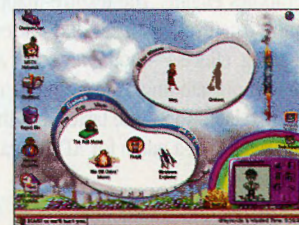
<http://www.winblows.com>

PRICE: \$20 (street)

REQUIREMENTS: 33MHz 68040 or faster processor, 16MB of RAM, 20MB of hard disk space, 8-bit color monitor, 2X CD-ROM drive

Your enjoyment of Microshaft Winblows 98 will be directly proportional to how much you hate Microsoft. If you loathe MS you'll love Winblows; if you mildly disapprove of Gates you'll only like Winblows. The makers of parodies such as Pyst, The X Fools, and Star Warped didn't go too far out on a limb when they decided to lampoon Bill—and the results are predictably tepid.

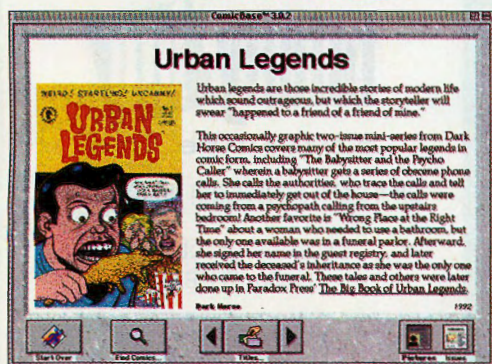
Winblows 98 features several areas where you can get your fill of Microsoft bashing. There's the Billagochi (a takeoff on the Tamagochi), where you have to take care of a virtual Bill Gates by feeding him money and cleaning



WINBLOWS IS much prettier than Windows.

up after one of his software "releases." Spy on Microshaft employees through the Campus-Cam, and two fictitious employees pop up from time to time to give advice. Winblows also includes four mildly entertaining games. At best, they'll make you laugh out loud—once or twice. Solve some riddles by reading intercepted email, and you can discover secret areas in Microshaft's network.

Microshaft Winblows98 is amusing, but that's all. Parody is tough, and unfortunately for Parrot Interactive, utterly unforgiving.—DR



got HFS+?



You've probably heard about the new HFS+ filing system that Apple released with System 8.1. This long awaited update now allows your current hard drive to hold a lot more data than before. Most of your files will now become smaller too. But what if something goes wrong with your HFS+ formatted drive? You'll need TechTool Pro. TechTool Pro is the only program available that can correctly repair and recover HFS+ drives. Besides the important drive repair and recovery functions we've added to version 2, you'll also get TechTool Pro's large arsenal of diagnostic tests. This means that not only can you find and correct drive and file problems (including HFS+ drives), but you can also test all those other critical parts of your system that our famous competitor ignores like RAM, CPU, floppy drives, scanners, Internet connections, CD-ROM drives

and much, much more. In fact, no other utility on the market can check the fitness of your Macintosh to the extent of TechTool Pro.

But just because TechTool Pro is the most advanced Macintosh troubleshooting utility available doesn't mean it's difficult to use. In fact we've added an easy-to-use interface that makes checking and fixing your Macintosh a snap. For the advanced user, our expert mode allows you to control and configure TechTool Pro in almost any way you wish.

For more information about TechTool Pro 2, call us at the number below or visit our web site. Once you're equipped with TechTool Pro, you'll see that there will be no need to cry over spilt milk.



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Animaniacs Game Pack

COMPANY: Funnybone Interactive

CONTACT: 800-545-7677, <http://www.funnybone.david.com>

PRICE: \$20 (street)

REQUIREMENTS: Power Macintosh only, System 7.1 or later, 16MB of RAM, 2x CD-ROM drive



Yakko, Wakko, and Dot are up to their old tricks in an animaniacal set of five fun games that will have kids belching, bopping, putting, and smooching to win. Play along as the Warner brats burp away robots, race to pick up props around a warehouse, torture a singing dinosaur that looks suspiciously like the purple PBS beast Barney, tee off at mini golf, and throw kisses at the bad guys. Pinky and

The Brain make guest appearances.

GOOD FOR GRADES: 3 and up

LIKES: "I liked it when you could swing, jump, and explore all around town." ■Michelle

"Pinky and The Brain make a special appearance. Now that was cool."

■Traci

"I liked the song of the game because it's the same song of the show." ■Jolie

DISLIKES: "The only thing I didn't like was that it was a little slow-going."

■Mandy

SOUND ADVICE: "I would add more activities."

■Bruno

FINAL REPORT: Bugs Bunny was never this bad, er, we mean, good. We mean that being bad is good. Um, never mind.



Meet the players...



KIAH BUCHNER, Age 10, Grade 5
EXPERTISE: Boogie boarding
PICK OF THE MONTH: Arthur's Birthday



TRACI NOWAKOWSKI, Age 10, Grade 5
EXPERTISE: Skydiving
PICK OF THE MONTH: Arthur's Birthday



MICHELLE GOODWIN, Age 11, Grade 5
EXPERTISE: Making peanut butter sandwiches
PICK OF THE MONTH: Arthur's Birthday



BRUNO BOVO, Age 11, Grade 5
EXPERTISE: Skydiving
PICK OF THE MONTH: Animaniacs Game Pack



MANDY MORALES, Age 10, Grade 5
EXPERTISE: Skiing
PICK OF THE MONTH: Fun With Architecture



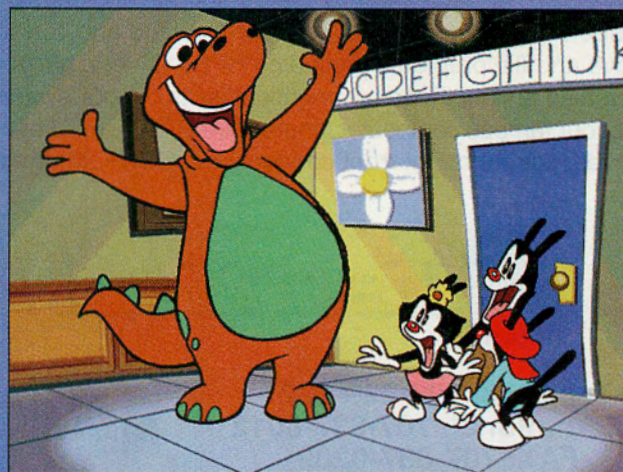
JOLIE LAU, Age 11, Grade 5
EXPERTISE: Skiing
PICK OF THE MONTH: I'm Ready for Kindergarten: Huggly's Sleepover



JIMMY LASSUS, Age 11, Grade 5
EXPERTISE: Surfing
PICK OF THE MONTH: JumpStart Typing



AMANDA OLSON, Age 11, Grade 5
EXPERTISE: Snowboarding
PICK OF THE MONTH: Arthur's Birthday



YAKKO, WAKKO, AND DOT gang up to cause trouble in this five-game pack.

FIND A
DEMO OF
Arthur's
Birthday on
The Disc.

Tonka Search and Rescue

COMPANY: Hasbro Interactive

CONTACT: 800-638-6927, <http://www.hasbro.com>

PRICE: \$29.99 (SRP)

REQUIREMENTS: 68040 33MHz or faster, System 7.1 or later, 8MB of RAM, 2x CD-ROM drive



The Tonka Rescue Academy wants you, as a new recruit, to rescue sailors from an oil-burning rig, clean up the Tonka Town Zoo after a nasty earthquake, and save the stranded when a flash flood wipes out a local bridge. If you don't know how to fly the 'copter, drive the fire truck, or pilot the rescue



TONKA TEACHES KIDS the risky business of saving lives sans gratuitous Baywatch babes and biceps.

boat, you'll first need to get your degree at the Tonka Rescue Academy. Good luck, recruits.

GOOD FOR GRADES: Preschool to 5

LIKES: "I liked saving people's lives." ■ Michelle

"I liked the fire truck. I also liked when you got to make your license plate." ■ Traci

"I really liked that you got to drive your vehicle after you repaired it." ■ Amanda

DISLIKES: "I don't like how you always crash." ■ Jolie

"I didn't like how everything was slow." ■ Mandy

SOUND ADVICE: "I would improve the game by making some new trucks." ■ Bruno

FINAL REPORT: Helps kids help others while helping themselves.

Barbie Fashion Designer

COMPANY: Mattel and Digital Domain

CONTACT: 888-628-8359, <http://www.mattelmedia.com>

PRICE: \$44.99 (street)

REQUIREMENTS: 68040 or faster, System 7.1 or later, 16MB of RAM, 2x CD-ROM drive



Barbie no longer has to drive her pink Corvette to the mall every time she looks into her townhouse closet and finds nothing to wear. Thanks to Barbie Fashion Designer, you can fashion your own ready-to-wear line of clothing just by picking a theme, throwing together an outfit and some accessories, coloring them, and printing them out on special paper. If you'd like to see how the clothes look on Barbie before you print them, you can watch your digital doll stroll the catwalk in a brief 3D fashion show of your hottest designs.

GOOD FOR GRADES: 1 to 4

LIKES: "I like the clothes." ■ Traci

"I liked how it told me how to play." ■ Kiah

DISLIKES: "I thought you'd be able to dress Ken, too, but I couldn't find him." ■ Michelle



BARBIE DOESN'T NEED more clothes, she needs a life.

"I don't like the choices they give you—how you have to put all those clothes on her." ■ Jolie

"I didn't like that they only had one Barbie to dress. You couldn't change her hair or anything." ■ Amanda

SOUND ADVICE: "I think they should put an expression on Barbie's face." ■ Jimmy

FINAL REPORT: Clothes alone do not make the man. Or woman.

I'm Ready for Kindergarten: Huggly's Sleepover

COMPANY: Scholastic

CONTACT: 800-724-6527 or 212-343-7100, <http://www.scholastic.com>

PRICE: \$29 (street)

REQUIREMENTS: 68040 or faster, System 7.1 or later, 16MB of RAM, 2x CD-ROM drive



Crawl under your bed and into a monstrous underground to help Huggly and his creepy cute pals prepare for their Annual Monster Sleepover. There's a lot to do! Create a poster with stickers for the big event, make up stories to share using even more simple stickers, make pies with Huggly's moody uncle Zubba, and find enough pillows around the house for the blowout Pillow Bounce.

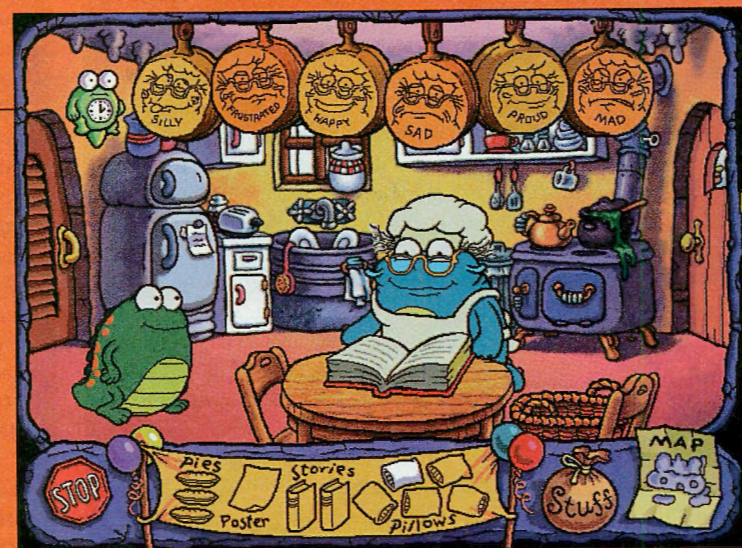
GOOD FOR GRADES: Preschool to 1

LIKES: "I thought Huggly was cute. I also enjoyed the way it can help kindergartners." ■ Kiah

"I liked all the little people because I think they're cute." ■ Traci

"I liked everything because all the monsters were so nice and generous. This program does not show any hate for little children." ■ Michelle

DISLIKES: "I didn't like the uncle of Huggly because he acted dumb, but little kids might like him." ■ Bruno



EVEN THE YOUNGEST of partyers will have a blast planning this annual bash.

Fisher-Price Wild Western Town

COMPANY: Davidson & Associates

CONTACT: 800-545-7677, <http://www.education.com>

PRICE: \$20 (street)

REQUIREMENTS: Centris, Quadra, or faster, System 7.1 or later, 8MB of RAM, 2x CD-ROM drive



Deputy Dog and Sheriff Sassafras aim to apprehend Bandit Bob, the sneak thief who freed Wild Western Town of a big bunch of gold bars, but they need your help. As you look for the loot, you'll keep your hands busy and your vocal chords trembling making wanted posters and badges, shooting stuff from cannons, and singing along to Old West tunes with Ruby Sage Brush. As a jack-of-all-trades, you'll also lend a hand at the Wild Western Hotel, giving out belongings to the guests and filling orders with Emma at the General Store.

GOOD FOR GRADES: Preschool to 2

LIKES: "I liked the songs you could sing at Pepe's Piano Place."

■ Kiah

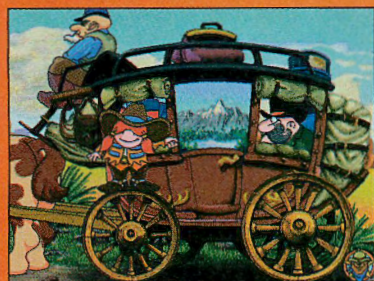
"I liked how the characters looked, acted, and talked. They were funny." ■ Bruno

DISLIKES: "The characters were ugly. They said stupid things like 'Hi, friend,' and it quit me in the middle of a game."

■ Jimmy

SOUND ADVICE: "I don't like how you wait a long time to go to other activities. I would make this faster." ■ Jolie

FINAL REPORT: There's gold in them there parts.



THIS WAGON is tame enough for toddlers looking to learn the law in the Wild West.

Fun With Architecture

COMPANY: Learn Technologies/Voyager

CONTACT: 888-292-5584, <http://www.learntech.com>

PRICE: \$24.95 (SRP)

REQUIREMENTS: 68040 25MHz or faster, System 7 or later, 8MB of RAM, 2x CD-ROM drive



Bust open this book on building basics and watch as the digital pages actually seem to gather dust before your tired eyes. No sound, no splashy graphics, no funny cartoon hosts—this disc would be a dud if it didn't give you so much freedom to create. You have to learn the foundations of architecture by reading, but you can build your own creations just by turning, sizing, coloring, and dragging a selection of 45 shapes onto your awaiting canvas.

GOOD FOR GRADES: 3 to 5

LIKES: "I like how you get to do or make anything you want." ■ Mandy

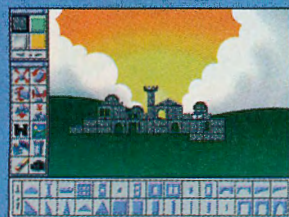
"I liked how you got to pick a background." ■ Bruno

DISLIKES: "The blocks and houses were big and strange looking." ■ Amanda

"The noises were annoying." ■ Traci

SOUND ADVICE: "I would make more activities and put more backgrounds to choose from." ■ Jolie

FINAL REPORT: Legos without the flash.



FUTURE ARCHITECTS make mountains, mansions, and maybe even molehills with the building blocks of design.

Arthur's Birthday

COMPANY: Brøderbund Software

CONTACT: 800-548-1798, <http://www.broderbund.com>

PRICE: \$30 (street)

REQUIREMENTS: 68040 20MHz or faster, System 7.1 or later, 8MB of RAM, 2x CD-ROM drive



ARTHUR'S BIRTHDAY makes a great gift for aging youngsters.

Guests at Arthur's Birthday have as much fun playing with the kooky clickables as Arthur does planning his big day, in the latest interactive storybook from Brøderbund. Read along to hear how Arthur solves his birthday dilemma and winds up with a blushing bold gift from Francine. Pin the Tail on the Donkey and D.W.'s Great Gift Mystery are good for a few kicks.

GOOD FOR GRADES: Preschool to 2

LIKES: "I really liked the things that the objects or people did when you clicked on them. They were really funny." ■ Amanda

"I like how you can play games with Arthur." ■ Jolie

DISLIKES: "They should make the mystery game harder." ■ Jimmy

"It was hard to understand when the voices got scratchy." ■ Bruno

SOUND ADVICE: "I would take out all the kissing. Instead they could play Pin the Tail on the Donkey." ■ Kiah

FINAL REPORT: Everyone wants to go to Arthur's birthday party.

JumpStart Typing

COMPANY: Knowledge Adventure

CONTACT: 800-542-4240 or 818-246-4400,

<http://www.adventure.com>

PRICE: \$30 (street)

REQUIREMENTS: 68040 or faster, System 7.1 or later, 16MB of RAM, 4x CD-ROM drive



It's time for the universe's first Extreme Typing Competition, and Coach QWERTY wants the Sparks to bring home the gold. Rusty athletes can get in shape at the keyboard training center by drilling all 10 digits in speed and accuracy. This season's events include Roller Racing, Cliff Hanger, Trailblazer, and Keyboard Kicks—a fast-paced foosball game in which you type in the right letter combos to make your team members move.



EXTREME TYPING TUTOR scores high across the boards to bring home the gold.

GOOD FOR GRADES: 2 to 5

LIKES: "I like how you snowboard while typing." ■ Traci

"I like how it helps you improve your typing, because in the future everything will be controlled by computers." ■ Bruno

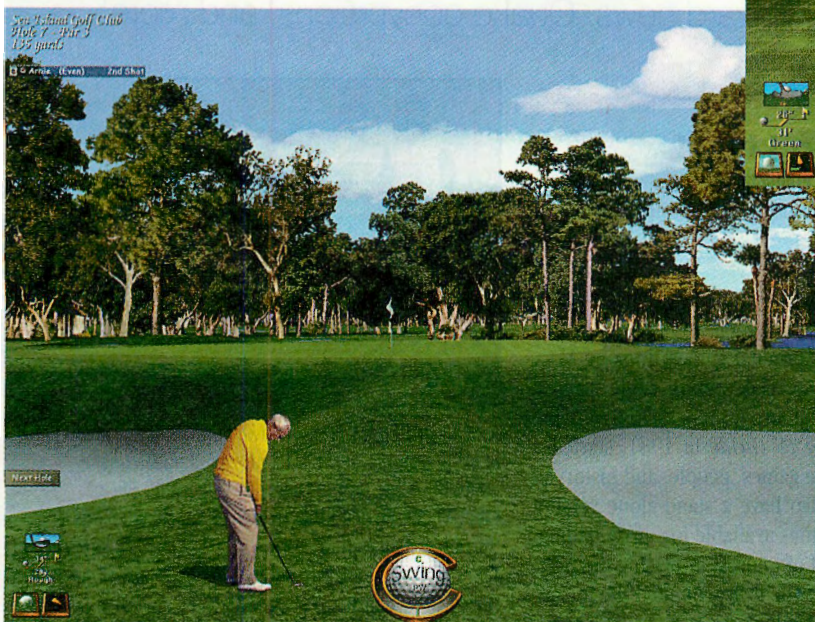
DISLIKES: "Cliffhanger was really hard to figure out." ■ Kiah

SOUND ADVICE: "I'd make the game go a little bit faster. I'd also put in grade levels." ■ Mandy

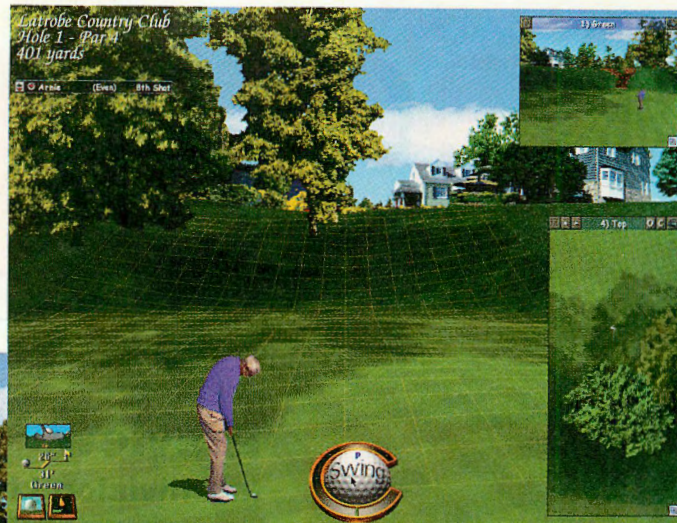
FINAL REPORT: Typing gets physical.

LinksLS

Macintosh



Actual screen captures
using Links LS Macintosh

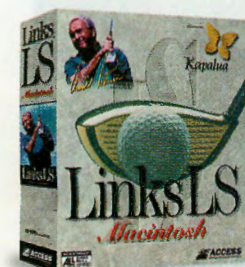


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PALES by
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powerplay

Classic arcade games revisited, Blizzard news, Quake conversions, and more!

News

Myth Overkill Pack

COMPANY: Bungie
CONTACT: 800-295-0060,
<http://www.bungie.com/store/store.html>
PRICE: \$49.95

We'd be mythleading you if we told you the following items were necessary to beating Myth: The Fallen Lords. However, wearing a Myth Thrall T-shirt and a Bungie Myth baseball cap will make you feel like you're in uniform, hanging a Myth poster near your Mac will put you in a more aggressive mood, and listening to the soundtrack CD will get your blood pounding. Maybe, just maybe, the Strategies and Secrets Hint Book will teach you a thing or two.—KT

Power3D PC

COMPANY: TechWorks
CONTACT: 800-883-6495,
<http://www.techworks.com>
PRICE: \$159.95

TechWorks, tired of having people buy a cheaper PC 3Dfx board and pirate TechWorks' drivers, has announced the Power3D PC version, available direct and via the Web. This card targets PC users, but you can install it in your Mac. You'd then download the drivers from TechWorks' Web site. The difference between the Mac and PC versions is that the Mac card is bundled with full versions of some games, whereas the PC card has only demos. What a deal!—KT

Preview

Intellivision Lives!

COMPANY: Intellivision Productions
CONTACT: <http://www.makingit.com/intellivision/>
PRICE: \$29.95

Mattel Electronics pulled the plug on Intellivision more than 14 years ago, but soon you'll be able to play many of the original games on your Mac. The idea for a commercial venture came when a group of the original programmers, dubbed the Blue Sky Rangers by *TV Guide* in 1981, started a Web site detailing the games, people, and history of Intellivision. They also have a stand-alone version of several classic games available for downloading. An unexpected flood of interest in playing the original games on a Mac (or PC) prompted the formation of Intellivision Productions.

They have since acquired the rights to the Mattel- and INTV-owned games and have written Mac and PC emulators to run the original cartridge binaries. The emulator and about 75 classic titles will be released on CD-ROM, along with some games that have never seen the light of day. Also included is a nifty multimedia history of the company, including everything from individual game histories and known bugs to hardware and the people behind the company.

Company president Keith Robinson and VP Stephen Roney, both former Mattel programmers, are also big Mac fans. "Support for the Mac was planned from the beginning. I've got a Mac, my dad's got a Mac, my neigh-



**FIND AN
EXCLUSIVE
DEMO of
Shark!
Shark! on
The Disc.**



SHARK! SHARK! became one of the most popular and best reviewed games ever. Gameplay is simple, yet addictive. The CD-ROM will have about 75 games.



A 1983 PORTRAIT of one of two softball teams made up of programmers at Mattel that played against each other. Standing (left to right): Mike Minkoff, Steve Ettinger, Bill Fisher, Keith Robinson, Joe Ferreira, Ron Surraff. Sitting (left to right): Julie Hoshizaki, Steve Tatsumi, Dale Lynn, Eric del Sesto, Tom Lohff, Stephen Roney, Tony Ettaro.

bor's got a Mac, we're Mac people!" says Robinson.

The decision to make a Mac version, however, was based on more than just the fact that Robinson and Roney are both Mac fans. They estimate that the Mac version accounts for about 25 percent of the downloads from their Web site. "We're getting those ratios despite the fact that the Mac version requires a PowerPC and the PC version will run on a 486 [or better]," says Roney.

If the emulator CD-ROM package sells well, they may create new, enhanced versions of classics that maintain the original gameplay but take advantage of modern hardware. And if there is a demand, they may also make a hand controller similar to the original console input device. The number of keys required to play some games can get very confusing, so we hope they do it.—WA



SPACE SPARTANS, the first of four Intellivision games (Intellivision was a hardware plug-in module that allowed synthesized speech), was released in 1982.

Quake Conversions

X-Men: The Ravages of the Apocalypse

COMPANY: MacSoft

CONTACT: 800-229-2714; <http://www.wizworks.com/macsoft/>

PRICE: \$24.99

Malice

COMPANY: Quantum Access

CONTACT: <http://www.qamalice.com>

PRICE: \$19.95

Not content with the Quake you have in hand? Check out these two conversion packs to spice up your play. Each requires a full registered version of Quake for Macintosh. And these aren't completely new games; they use the Quake engine, so any techniques you learned there should be useful with the conversions. —KT

WE LIKED the neat graphics effects in Malice. Spectral explosions, no less.



BE CAREFUL. That last step is a doozy.

MALICE'S FONT is much harder to read and its installer isn't as nice as X-Men's, but it has cut scenes, rain, thunder and lightning, and 9 new weapons.

THE RAVAGES OF THE APOCALYPSE features 8 new weapons and 24 X-Men special powers.

DON'T MISS the comic book intro, which separates this conversion from the pack.



games

Diablo, Starcraft Update

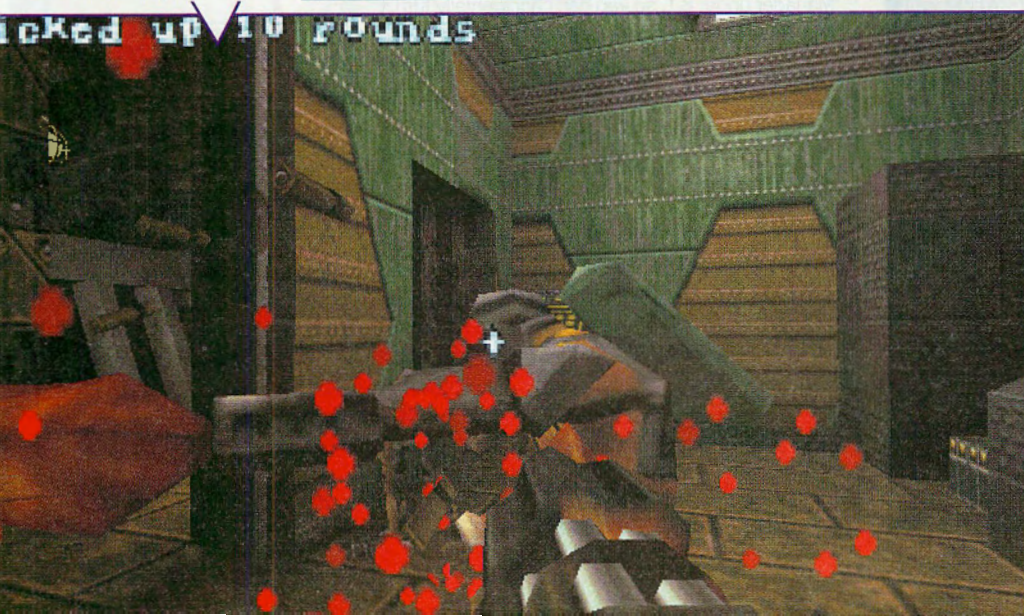
Diablo for the Mac should finally be hitting the shelves, and it will be worth the wait. If you've been watching with envy as your PC friends connect to BattleNet to kill each other in mean and nasty ways, take heart. Diablo will be the first Mac title from Blizzard to support BattleNet. Now you can show those PC weenies who's boss! The sci-fi follow-up to Warcraft II, called Starcraft, will have gameplay similar to Warcraft II and three distinct races. The early beta we've seen has fantastic graphics and a lot of unique features; this isn't just Warcraft II with aliens. Blizzard plans to release the Mac version only a month or two behind the PC version; the company attributes the delay to the fact that it has taken longer than expected to debug Diablo, and the programmers fixing the bugs won't start working on Starcraft until after Diablo ships. —WA



INTREPID DISC EDITOR

Wade Albright was not afraid to wrest this ax from the hands of an Orc in Blizzard Entertainment's lobby.

Picked up 10 rounds





how to switch to HFS+

Recovered hard-drive space courtesy of Apple Computer.

HFS+ is potentially the best thing to come along with Mac OS 8.1. It's also the most frightening. Why? To take advantage of HFS+ (or Hierarchical File System Plus, Apple's new disk format), you have to erase your hard drive. The benefits of HFS+? More hard drive space. Apple's old hard drive format worked fine in the days of smaller drives, but with today's 4GB (and larger) drives it wastes a lot of space—as much as one-fifth of your Mac's hard drive. By upgrading to HFS+, you can expect to save serious hard drive space, possibly in the 20MB to 200MB range—depending on the size of your drive and the number of small files you have.

HFS+ is *not* necessary for you to run Mac OS 8.1, which works great on a standard HFS volume; however, you must have 8.1 to access an HFS+ volume or use it as a start-up volume. You can mount an HFS+ volume if you're using OS 8 or lower, but you won't have access to the data. Instead, you'll see a text file describing why you can't get at the files.

Because this technology is new, you must proceed with caution. While HFS+ provides tremendous benefits, it may not be completely compatible with all existing hardware and software. The biggest problems come with disk-repair utility software, such as Norton Utilities or FWB's Hard Disk Toolkit—neither program currently works with HFS+. Hopefully, by the time you read this, those and

most other packages will have been updated to work with HFS+.

TIP: To install HFS+ you must reformat, or erase, your existing drive. Alsoft (<http://www.alfsoftinc.com>) has a program called PlusMaker that allows you to create an HFS+ volume without reformatting. Alsoft also makes PlusMaximizer, which lets you make really small allocation blocks for maximum savings.

The following method is one of many ways to convert to HFS+ without using the Apple 8.1 Update CD. No reinstalling should be necessary. Just make sure everything is backed up. Better safe than sorry!—*Buz Zoller*

What you'll need:

- Apple Macintosh or Mac-compatible computer with PowerPC processor
- Mac OS 8 already installed
- Working floppy drive
- Second hard drive or removable-media drive (large enough to hold the contents of your main hard drive)
- Mac OS 8.1 Update (available on the *MacAddict* CD)
- Disk Tools 8.1 PPC (available for download from <ftp://ftp.apple.com>, or find a disk image on The Disc)



FIND THE
MAC OS 8.1
UPDATE and
MacSlack on
The Disc.

Big Disclaimer

Please—install with caution. Granted, there are lots of other ways to install HFS+, and some methods will work better for some. We chose this method because many users have access to removable-media drives (such as Jaz drives), or at least to a second hard drive, and because it relies mainly on the Disk Tools PPC, which is available as a free download from Apple's FTP sites.

Apple recommends using the 8.1 Update CD to update your drive to HFS+. This CD is available only from Apple and you must purchase it. I'm sure Apple's recommended methods work just fine. If you have that CD, you may want to use the suggested method, which should be explained on the CD in the About Mac OS Extended Format Read Me file. And I can't say it enough: Please back up everything prior to updating your drive to HFS+ and hold on to that backup *after* updating to HFS+—just in case.

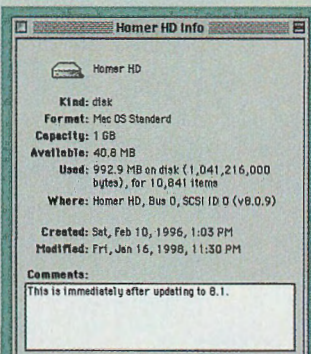
STEP 1 Update to 8.1

Update your System to Mac OS 8.1, then make sure the Text Encoding Converter extension is in your Extensions folder. It is extremely important to have this file in the Extensions folder for HFS+ to function properly. (The Text Encoding Converter extension will *not* show up in the Extensions Manager under 8.1, so you can't accidentally turn it off.) See "What Happens without the Text Encod-

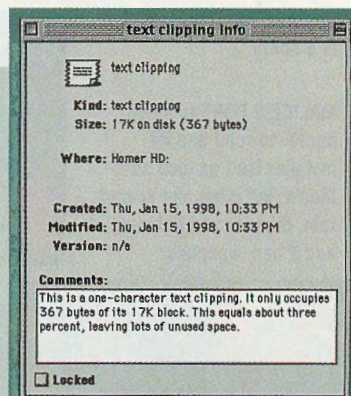
ing Converter" if you want to know exactly what happens without it.

This is a good time to find out how much space you're using on your HFS-formatted drive. Highlight your hard drive icon and select Get Info from the File menu. On my 1GB HFS drive, the data takes up 992.9MB on disk, leaving only 40.8MB available.

Just for comparison's sake, take a look at how much space a small file can take up on an HFS volume.



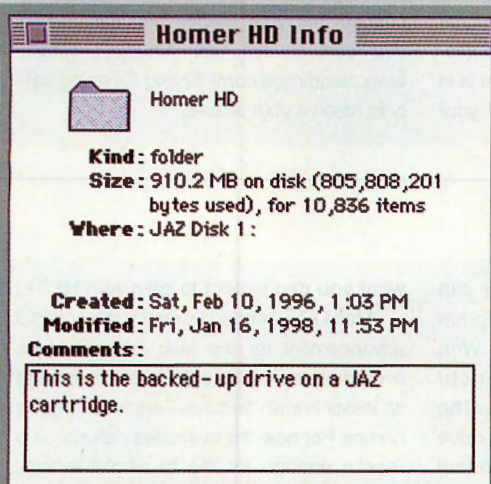
A LOOK AT the average hard drive after updating to Mac OS 8.1 but before converting to HFS+.



THIS LITTLE 367-BYTE FILE takes up a whopping 17K on this HFS drive. We'll fix that!

STEP 2 Back Up Everything to Another Drive

Back up everything (most important, your System Folder) to a secondary drive. And then, for extra security, back it up to a third drive (if you have one). That way, you always have at least two copies of your data; if one copy gets hosed, you have a backup of your backup. Use an external hard drive, a second internal hard drive, or removable media (such as Jaz or SyJet). Back up the data by drag-copying everything to another location in as organized a fashion as possible since you're going to drag everything back once your main drive has been erased. Make sure you don't miss the items on your desktop.



ONE FOLDER holds the whole drive. If you have the space, make two or three backups.

What Happens without the Text Encoding Converter

Curious as to what might happen if you don't have the Text Encoding Converter installed when you use HFS+? Not only will aliases fail to find their original item, but you may see other strange and unpredictable behavior. Check out these screen shots.



The command could not be completed, because the original item could not be found.

OK

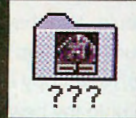
ALIASES MAY MYSTERIOUSLY BREAK, becoming orphaned and alone.



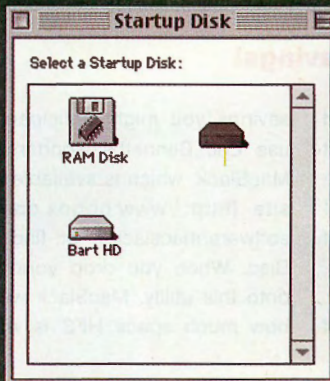
SimpleText cannot open this document. It may be in use by someone else.

Cancel

NO ONE IS USING SIMPLETEXT, but the Mac OS doesn't know that.



THIS FOLDER used to have a name, but the Mac OS forgot it.



IT'S GOOD OLD No Name Joe! Actually, it's the hard drive formerly known as Homer.

STEP 3 Erase Your Hard Drive

To reformat your drive with HFS+, you must boot up using an 8.1 system. Start up your computer with the 8.1 Disk Tools PPC floppy disk in the drive. Also, if you backed up your data to a Jaz or Zip disk, make

sure the cartridge is in the drive when you start up. That way the cartridge will mount, and you won't need the lomega extension.

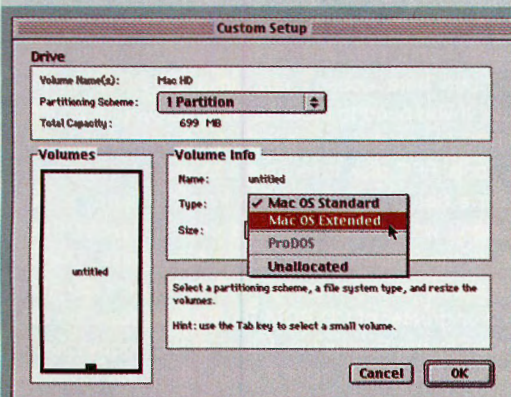
NOTE: Always using lomega Tools to initialize your Jaz or Zip cartridges ensures that a driver actually gets written to the disk.

Launch Drive Setup Lite from the floppy disk. Highlight your hard drive in the Drive Setup window and click the Initialize button. Then click Custom Setup and select your partitioning scheme. We chose a single Mac OS volume, but you can break your drive into more partitions, if you like. You can even format different partitions as HFS or HFS+.

Once you've selected the partitioning, choose Mac OS

Extended for HFS+. Click OK, which brings you back to the Initialize window. Click Initialize. Drive Setup will give you a couple of warning messages and then start initializing. When it's done, the Drive Setup window will say "Initialization successful."

Drive Setup and Drive Setup Lite initialize only Apple-brand hard drives. They'll recognize and allow initialization of some third-party drives, but nothing is guaranteed. If Drive Setup doesn't let you initialize your hard drive, simply choose Erase Disk from the Special menu. HFS+ isn't driver based, so it works with most hard disk drivers. Make sure you have the most current version of your disk-driver software (such as Hard Disk ToolKit or Silverlining). If you're unclear about which disk-driver software controls your hard drive, consult the documentation that came with your computer.



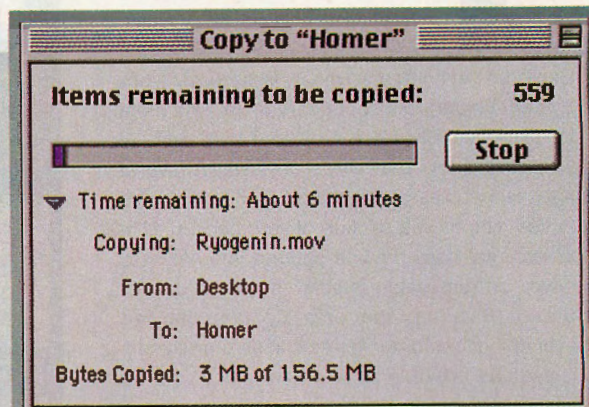
DRIVE SETUP'S CUSTOM SETUP screen lets you choose Mac OS Extended—or HFS+—as your drive format.

STEP 4 Restore All Your Data

At this point, you should have your newly initialized HFS+ volume on the desktop. If you used Drive Setup Lite, the volume will be called Untitled. Go ahead and rename it to what it was before you initialized it. You should also have the drive that contains your backed-up data mounted on the desktop. Now, copy all your files from your backup up onto the newly initialized drive; the most important part of this is your System Folder. When copying your data back, organize it exactly as it appeared on your original drive, before you formatted the drive. This helps prevent broken links between data files and programs. After you've copied all your data, double-check to make sure Text Encoding Converter is in the Extensions folder. Also, double-check to see that the System Folder is still "blessed," that is, it has the correct folder icon with the little computer on it. If

not, open the System Folder and click once on the Finder and then the System, and then close it again. It should now be blessed.

Restart your computer. The Disk Tools floppy disk should eject by itself. If all went well, you should be booting to your original hard drive, now using Mac OS 8.1 and HFS+! Since the desktop database was erased along with all your data, your Mac will rebuild the desktop. If you find that some of your aliases no longer work, double-check that the Text Encoding Converter is in your Extensions folder. Otherwise, all your



It may take a while to restore your hard drive from your backup copy, but think of all the work you'll save.

aliases should be connected. On the off-chance that your aliases become broken, you can always use Aladdin's (<http://www.aladdinsys.com>) Spring Cleaning utility to resolve your aliases.

STEP 5 Check Out the Savings!

Before HFS+, this drive—Homer—had only 40MB available; with the same files, it now has more than 150MB. I just gave myself an extra 100MB of drive space! Remember that 367-byte text clipping? It now occupies only 4K of disk space.

Of course, your savings may vary. For more solid numbers on what kind of

savings you might anticipate, you can use Eric Bennett's wonderful program MacSlack, which is available at his Web site (<http://www.pobox.com/~ericb/software/macslack/>), or find it on The Disc. When you drop your hard drive onto this utility, MacSlack will calculate how much space HFS is wasting and

what you can expect to gain with HFS+.

Mac OS Extended Format is a wonderful advancement for the Mac and will shine even more as the Mac OS exploits some of its lesser-known features—such as long file names. For now, the increased disk space is reason enough for me to wholeheartedly recommend using it. Enjoy!

HFS

Geek Note

HFS+ is officially called Mac OS Extended Format. HFS+ changes the way data is written to a disk. When a disk drive is formatted, it is broken up into many small, fixed-size chunks called allocation blocks. When data is written to a disk, it fits into these blocks. Since there can be only 65,536 allocation blocks on an HFS volume, the larger the volume, the larger the blocks. For example, a 1GB drive with HFS formatting has a block size of 16K, while a 2GB drive has a 32K block size, and so forth. A text clipping that contains only 2K of data still takes up an entire block—which may be as large as 64K on a 4GB hard drive. HFS+ works by handling up to 4 billion allocation blocks; each individual block can be much smaller. Under HFS+ formatting, a 1GB drive has a block size of 4K (4096 bytes), which stays constant for any volume larger than 1GB. The HFS+ block size is 1K for volumes up to 512MB and 2K for volumes from 513MB to just under 1GB. These are the block sizes Apple thinks are most efficient, although the HFS+ specifications allow for block sizes as small as 0.5K or 512 bytes. Some believe block sizes this small may affect performance, but the jury's still out on that.

Installing HFS

on a Clone

The above method should work pretty much the same on an Apple Mac or on a Mac compatible. The only difference is that Drive Setup and Drive Setup Lite won't initialize most third-party hard drives. By selecting Erase Disk from the Special menu when you boot using the Disk Tools PPC disk, you can format a third-party hard drive with HFS+.

Mac OS clone machines use non-Apple CD-ROM drives, which are usually controlled by third-party software. The problem is that the Disk Tools PPC floppy disk works only with Apple CD-ROM drives. The method we've described here doesn't rely on a CD-ROM, so this shouldn't be an issue. If you need to mount a CD when you're booting with the Disk Tools PPC floppy disk, there is a workaround that entails modifying the Disk Tools PPC disk to enable it to mount CDs. To do this, first trash the Drive Setup Lite application from the floppy to free up some space (it won't work with clone hard drives anyway). Then copy your CD driver to the System Folder on the floppy disk. The CD drive on most clone machines is driven by FWB Software's CD-ROM ToolKit. For version 2 or greater of CD-ROM ToolKit, just copy the CD-ROM ToolKit Extension to the Extensions folder of the floppy disk. If you have an earlier version of CD-ROM ToolKit, copy the CD-ROM ToolKit control panel to the Control Panels folder on the floppy disk. Now you have a Disk Tools PPC disk that will let you mount CD-ROMs.

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FIND
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know it all

about Finder views

Finder view settings can greatly help—or hinder—your quest for a file.

We all know the type: messy, disorganized, and sloppy. Not only are their houses a mess, but take a look at their Macs. The desktops are cluttered with dozens of files and folders, many overlapping and some even poking off the edges of the screen. Yet they can navigate to exactly the file they want and seem to work just as quickly and efficiently as you do. How on earth do they do it? Your desktop is meticulously arranged, consisting of your hard drive and the Trash. Inside your hard drive, the list view is organized by the label color you've given each folder. You've even created comments for your labels. You know where everything is, and you can get there quickly.

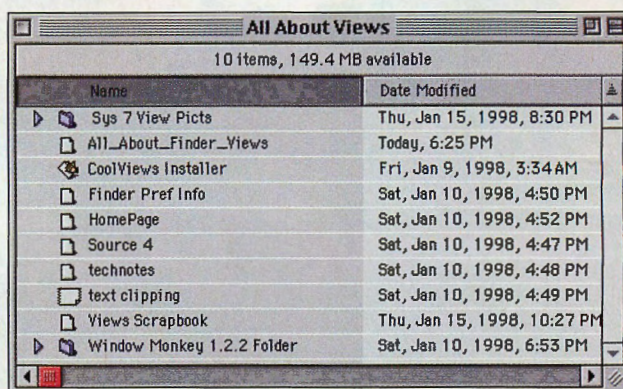
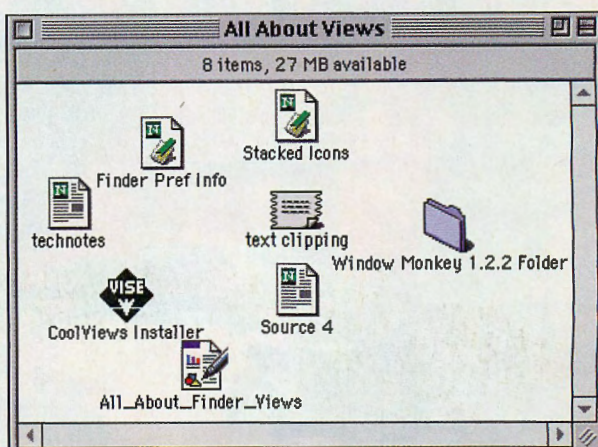
Here lies one of the true unsung features of the Mac OS: the ability to organize files the way *you* want to. Navigating the information on your computer is done via the Finder. By changing

some Finder preferences, it's possible to create an interface that suits the way you work. Whether that's in apparent chaos or in a structured masterpiece, the Mac OS can make it happen.

Under Mac OS 8, some significant changes have been made to the way you use and create these views. But for the most part, the basic principles remain that were introduced with System 7. We can simplify all Finder views to icon views and list views. In an icon view, a window displays its contents as icons you can move and arrange as separate objects.

In a list view, the contents of the window are displayed as a sorted list of items. These items can't be rearranged within the list.

These are the two broad Finder view types available with the Mac OS, but there are many variations you can use to organize your files. Let's look at some of those variations and how they work.

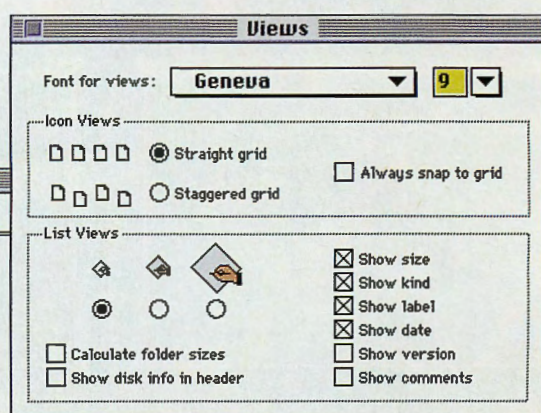
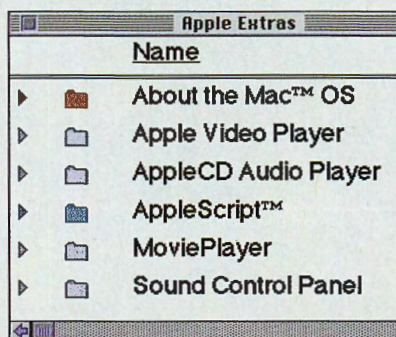


System 7 Views

With System 7, you use the Views control panel to control how Finder windows look. This control panel sets the behavior for all windows and the desktop, and as you can see the options aren't that exciting. You access any further control through the View menu in the Finder. To beat all, the default list view shows the tiny generic icons. Most users prefer the middle setting, which uses the standard 16-by-16-pixel icons that actually give you some information about the file.

The List Views options in the Views control panel let you decide how much information you want shown next to each item, ranging from a ton of infor-

mation to nothing but names. With System 7, when you set the Views control panel, every folder and drive on the computer conforms to those settings.



THIS LIST VIEW shows no information (except the folder names) because all the check boxes are unchecked in the Views control panel.

Tip 1

Want to change the color of a folder icon? In System 7, highlight the item and choose a color from the Label menu. In Mac OS 8, highlight the item, control-click, and select a color from the Label submenu.

In the Views control panel you'll notice the options Always Snap To Grid and Staggered Grid. These let you decide if you want your icons to arrange themselves automatically when you put them in a folder. This



is a pretty OS8 FiPicture 4x4 JARY

nice organizational tool, but, because the icons are all located at the same place on the grid, they sometimes stack on top of one another.

If this happens, here's how to fix the problem. Change the view to View As List, then switch back to icon view. In icon view, hold down the option key and choose Clean Up By Name from the Special menu. The Mac OS should clean up your icons right away.

Tip 2

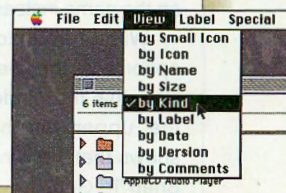
Holding down the command key while dragging an item toggles Snap To Grid on and off. When you release the command key, Snap To Grid reverts to its original setting.

Tip 3

To automatically expand more than one item in a list view, highlight the items and press command-control-right arrow.

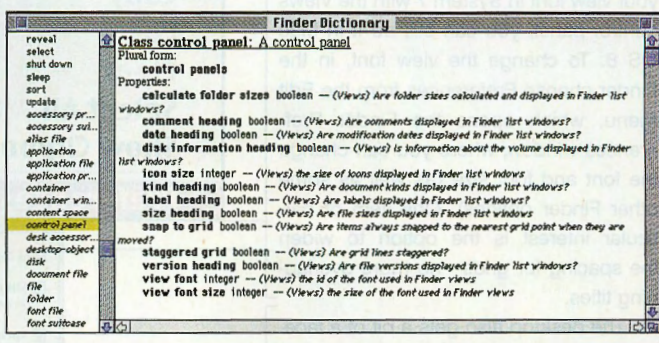
The Views control panel also lets you choose a font and font size for your file and folder names. You can let your imagination run wild!

You can choose how the list view sorts, and whether you want regular or small icons. Some folks really like the small ones because they let you fit more items in a window.



Power User Tip

The Views control panel is totally AppleScriptable. Check out the Finder's AppleScript dictionary. These options are in System 7 and Mac OS 8, but Mac OS 8 behaves a little differently, and the AppleScript syntax has changed. Open up the Hide/Show Folder Sizes applet (in Apple Extras: AppleScript:More Automated Tasks) in the Script Editor and take a look. Try creating a new script that does something different. You can find the dictionary of usable terms by choosing Open Dictionary from the File menu in the Script Editor, navigating to the Finder in the System Folder, and clicking Open.



Mac OS 8 Views

Mac OS 8 Views

Though the System 7 principle for viewing items in the Finder remains—view by icon or by list—Mac OS 8 has introduced some new viewing options as well as some changes in the way you access those options.

In Mac OS 8, each window has its own unique view, which you set up individually. While this gives you tremendous control, it can be time-consuming to set every folder to your preferred view.

If you are about to upgrade from System 7 to Mac OS 8, you can save yourself a little time by making a copy of your current Finder Preferences file. After installing Mac OS 8, replace the Finder Preferences file with the one you saved. Now all your windows will be set the way they were with System 7.

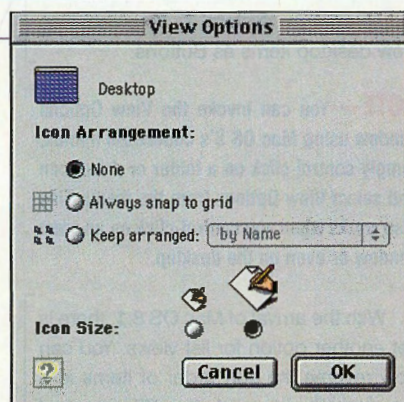
Another option is to install the shareware control panel CoolViews, by Quadratic Software (<http://www.quadratic.com>). CoolViews lets you set global view options and gives you some other cool options as well, such as showing Type and Creator in list views. You can also use Neatnik by Karl Bunker

(<http://users.aol.com/KarlBunker/Neatnik.html>), a drag-and-drop utility for setting views. It's beautifully executed and tremendously useful!

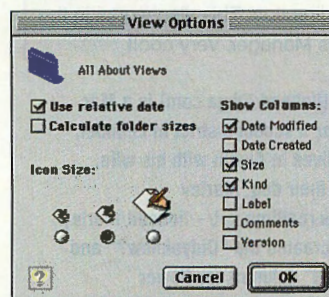
Mac OS 8 doesn't have a Views control panel. The Finder has taken over these duties; you can access them from the View menu in the menu bar.

You use the View menu to choose how you want to view a window in the Finder. Depending on how the window is set up, some options in this menu will be grayed out. For example, you can't clean up a list view and you can't view the desktop as a list. Mac OS 8 is contextual in that different items in different states have different options. You set each window's view by making sure it is the active window, then choosing View Options from the View menu.

The options change depending on how you view the window. With OS 8, list views have row and column separators—fine lines and gray columns, respectively. CoolViews, which we mentioned earlier, lets you disable these separators.



THESE ARE THE OPTIONS for an icon view window.



AND THESE ARE THE OPTIONS for a list view window.

Tip 4

You can quickly sort a list view by clicking on the heading at the top of the window; to sort by date, just click on Date Modified.

A new view option with OS 8 is to view windows as large or small Buttons, reminiscent of the Launcher or At Ease. These buttons behave like icons, except that you move them by clicking and dragging on the name instead of the icon.

With the Button view come new options in the View Options window. Note that the window has a little grid in the upper left hand corner, which shows that the window is set to Always Snap To Grid.

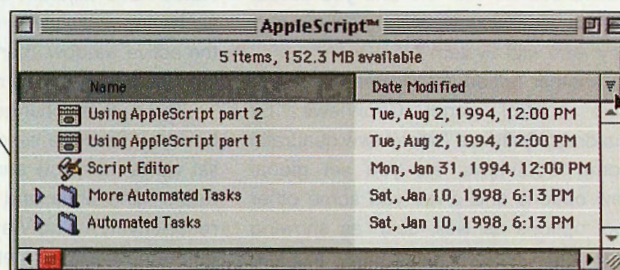
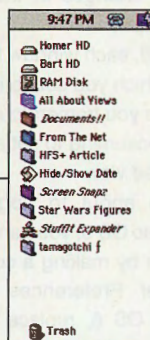
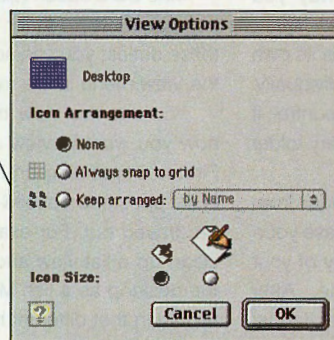
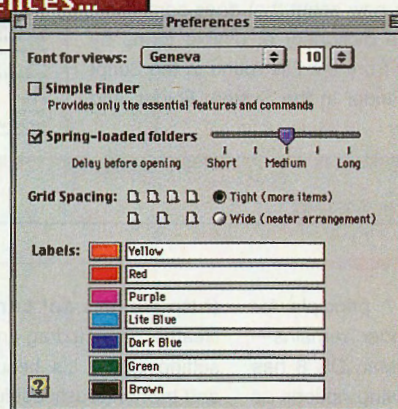
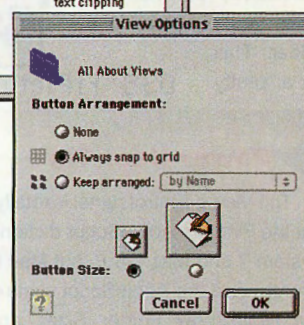
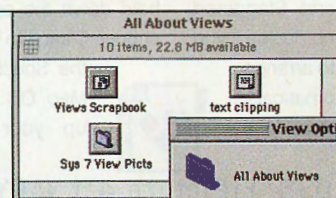
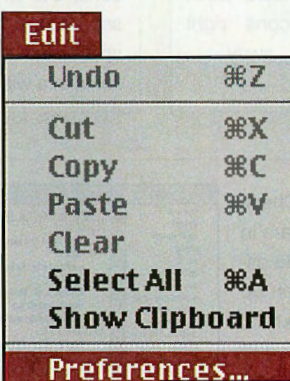
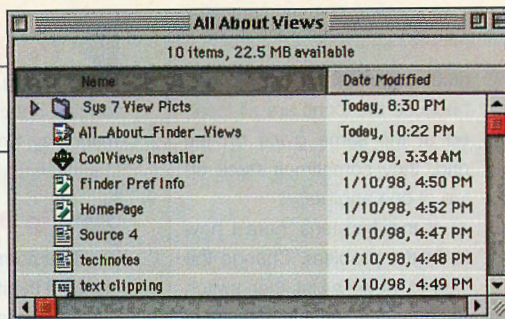
For those of you who liked setting your view font in System 7 with the Views control panel, you can still do it in Mac OS 8. To change the view font, in the Finder choose Preferences from the Edit menu, which opens the Finder Preferences window, where you can change the font and font size (as well as some other Finder options). One item of particular interest is the option to widen the spacing for grids—no more overlapping titles.

The desktop also gets a bit of a facelift, with the addition of two new view options. You can now view items on the desktop as small icons—an option that didn't exist in System 7. You can also view desktop items as Buttons.

NOTE—You can invoke the View Options window using Mac OS 8's contextual menus. Simply control-click on a folder or drive icon and select View Options from the menu. This also works when you control-click on an open window or even on the desktop.

With the arrival of Mac OS 8.1, there is yet another option for list views. You can now reverse the sort order of items in a list view. Simply click the little stacked pyramid icon in the upper right corner of the window. The items will sort in the opposite direction. This also works in the Extensions Manager. Very cool!

Buz Zoller (flohead@bga.com) is a Mac manager for a school district in Leander, Texas. He lives in Austin with his wife, Daria, and their dog, Marley (<http://www.realtime.net/~flohead/marley.html>). He created the "Didyknow?" and "...explained" columns for Power Computing. Those articles belong to Apple and are available on Apple's Web site.



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how to beat the Web professionals

The Top Stupid Mistakes of the Professional Webmasters, Part 1

Wanna have some fun? Find an old copy of Mosaic (remember Mosaic?) or Netscape Navigator 1.X. Open your browser window in a 14-inch monitor. Set it to 256 colors and turn off image loading. Now head for some of your favorite Web sites and try making your way around the pages, looking for information. Having fun? I didn't think so.

It doesn't take any skill at all to click around the Web and find home pages that violate every known rule of Web-page design—and make it difficult for those who have older browsers or who surf with-

out images. What's surprising is how frequently you run across bad pages put together by a highly paid staff of professional designers for major, nationally known Web companies. This month, let's look at some major sites, with names such as the New York Times and Random House. One site at a time, they're doing their part to make the Web just a little bit harder to use.

Let's just say this topic is my penitence for teaching you how to create frames. And in-line frames. Oh, and style sheets. When Bad Pages Happen to Good People.—*Joseph O. Holmes*

STUPID MISTAKE 1: Inappropriate Interlacing

The Basic Problem

You're probably intimately familiar with interlacing, the special form of GIF image that downloads and becomes visible incrementally, sort of like a venetian blind opening onto the image. It's neat because it lets a visitor preview a large image without waiting for the whole thing to download. A visitor can check the image and then move on.

Some Webmasters insist on using interlacing for everything, including images where interlacing does no good, and even where it hinders navigation. Take image maps. A partially downloaded interlaced image map isn't much use.



Tip:

By the way, there's no purpose to interlacing your background images. It will give the illusion of slower, not faster, progress. Don't do it.

Check out, for example, the New York Times's main navigation image map. To find what you're looking for—any of 30 pointers beautifully arranged in an otherwise clear and appealing layout—you have to click somewhere on this map. But, as you can see, you can't click on anything until you wait—and wait—for the interlaced image to become clear enough to read. The entire purpose of interlacing—to speed our way—is thwarted.

How to Beat the Pros

Browse around the Web looking for sites where interlacing appears to be a benefit. Not too many, right? How many of your own images benefit from interlacing?

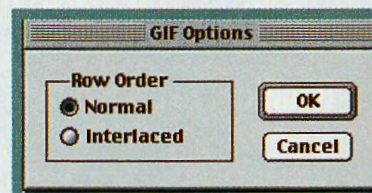
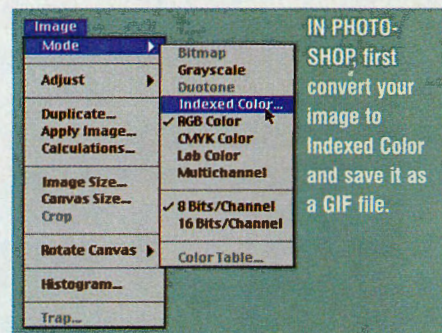
Now go forth and replace your unnecessarily interlaced images with plain GIF files. Many of the modern page-creation applications, such as PageMill and Claris Home Page, let you turn interlacing on and off.

If you're producing GIF images by hand in, say, Photoshop, it's nearly as simple.



Bonus Tip:

Interlacing small images, such as buttons, is pointless because they download quickly.



WHEN SAVING the file, you have the option to save as Normal or Interlaced. You know what to do.

STUPID MISTAKE 2: The Page without Purpose

The Basic Problem

I know you've run across this: You click a link, wait for the next page to load, then discover that there's nothing on the page but *another* link and *another* page to load. Here's the giveaway: "Click Here to Enter!" or "Come on in..." Some people go a little crazy with the concept of hyperlinking, forcing you to load page after page just to reach information that should have been a click from the first page. Take this page from Random House. Please.

The page is lovely, but it does absolutely nothing for me except use up 30 seconds—or more—of my precious time. Once the picture is downloaded, I have to click on it to get to the real home page. The message from a page like this is, "Your time is less valuable than our pretty picture."



How to Beat the Pros

Eliminating your Pages without Purpose can be hard work. You have to plan the navigation of the information on your site carefully, placing enough guidance on your first page to make everything quickly accessible, and yet not overload your visitor with too much information at once. My suggestion: Take note of pages that strike the right balance and copy their style of presenting information. For inspiration, just look how much information is a single click away from the main page of the New York Times site—individual stories, general categories, and Web-site help.



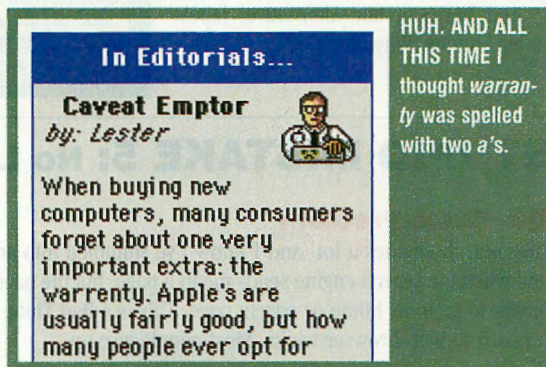
THE NEW YORK TIMES's Web site has a great layout that makes it easy to find what you want.

STUPID MISTAKE 3: Misspellings, Typos, and Bad Grammar

Misspelled words and bad grammar scream, "This page was created by a seven-year-old." (My apologies to seven-year-olds with excellent spelling.)

How to Beat the Pros

The major Web-page applications come with a built-in spelling checker. Use it. And ask your friends to check your grammar, unless they're as grammar-challenged as you are.



STUPID MISTAKE 4: Failing to Include Useful Alt Image Tags

The Basic Problem

Many of us turn off image loading. I sure do. I like images as much as the next guy, but there are days—many days, in fact—when I just want to move quickly around the Web. And, of course, there are browsers out there that don't read images at all. Do you realize that the PalmPilot and Newton MessagePad—not to mention thousands of Lynx users—can browse the Web?

It puzzles me to no end why Webmasters can't get it through their thick skulls that images alone, without alternative name tags, are simply not enough. Remember our page from Random House, above? Here's how it appears when I have image loading turned off.



Resources for the Smart Webmaster

Look around the Web and you'll find a few sites that make some of the same points, vividly. Pay them a visit.

The Bandwidth Conservation Society (<http://www.infohiway.com/way/faster/>)

The International I Hate Frames Club (<http://www.wwwvoice.com/hatefrm.html>) Highly recommended!

BrowserCaps (<http://www.browsercaps.com>) The focus is on the capabilities of the various browser brands.

If the Webmaster had added a simple Alt text tag, I could have clicked and moved on to the linked page. As it is, I have to wait and wait.

Now check out these two examples, and decide which you find more useful.

The lesson: Generic Alt tags, such as *image* and *button*, are almost as useless as no tag at all.

How to Beat the Pros

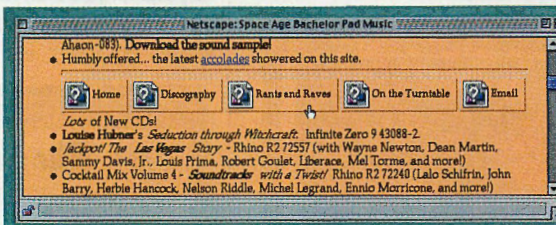
How easily will I be able to navigate *your* site with image loading turned off? Take a test run yourself. And when you're finished, you know what to do. Here's a sample of the code:

```
<IMG SRC= "graphics/home.gif"
ALT="Home">
<IMG SRC= "graphics/disco.gif"
ALT="Discography">
<IMG SRC= "graphics/rants.gif"
ALT="Rants and Raves">
<IMG SRC= "graphics/turndtable.
gif"
ALT="On the Turndtable">
<IMG SRC= "graphics/email.gif"
ALT="Email">
```

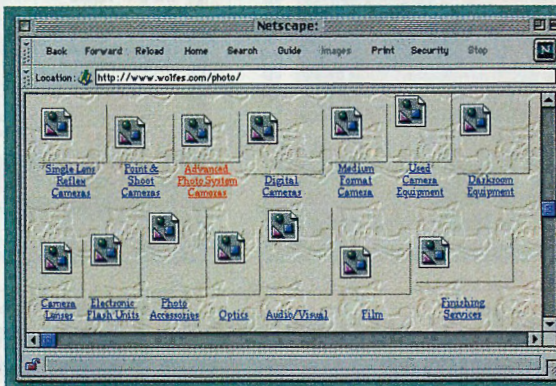
And here's a fair alternative: labels under buttons. Why not?



BUTTON, BUTTON, who's got the button?



NOW YOU CAN TELL which button you'd like to press, even with image loading turned off.



ALTERNATELY, if you spell out the links below each image, visitors will know which link goes where, even if the images don't load.

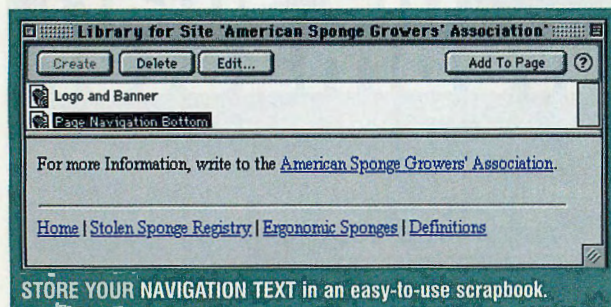
STUPID MISTAKE 5: No Link Back to the Home Page

The Basic Problem

I use search engines a lot. And I know I've stumbled into amateurland when the search engine sends me to a page, but the page offers no way to go to its home or parent page. This is a Bad Thing. I have to resort to Web-browser tricks. Most people give up.

How to Beat the Pros

There's no big trick to avoiding this problem: Just put pointers to your main page at the bottom of every one of your pages—remember that many visitors won't be able to use the Back button to return to your other pages.

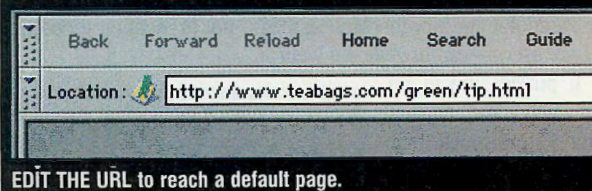


To simplify things, save your group of page-navigation pointers in your page-creation application's library or scrapbook.

These aren't the only major gaffes by the big sites, but I'm all out of room this month. Keep your eyes on this space for The Top Stupid Mistakes of the Professional Webmasters, Part Two!

Web Tricks

If you find yourself stranded with no way to reach a site's home page, try deleting the reference to the current page at the end of the URL and pressing return. For example, if you're at <http://www.teabags.com/green/tip.html>, delete [tip.html](http://www.teabags.com/green/tip.html) and press return. That will usually give you the default page in that directory. For the default page for the entire site, delete the directory references as well, leaving you with <http://www.teabags.com>.



EDIT THE URL to reach a default page.

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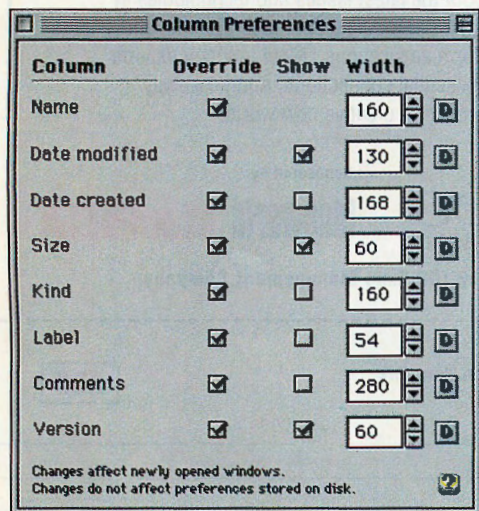
Q I have two separate hard drives, and I'm wondering if it's possible to make them appear as one hard drive on my desktop.

A You can do this pretty easily with FWB Software's RAID ToolKit (800-581-4392 or 650-482-4800, <http://www.fwb.com>). RAID, which is an acronym for *redundant array of independent disks*, describes a set of technologies where two or more drives act as one to deliver improved performance, versatility, and reliability. RAID Level 0 is data stripping, where files are split automatically among multiple drives for better performance. RAID Level 1 is drive mirroring, where files are written to multiple drives simultaneously for fault tolerance. The RAID feature you want is called drive spanning, where multiple volumes are combined by means of software to appear as one for increased capacity and convenience. It's the opposite of drive partitioning, where a single drive is broken up into separate logical volumes, each with its own icon.

Q Is there any way to modify the order in which columns appear when you view Finder windows by list in Mac OS 8? I'd like to arrange windows to show Name, Size, Date Modified, rather than the standard Name, Date Modified, Size.

A I don't know of any hack or utility that will let you reorder the columns in Finder windows, but I'd like to recommend Quadratic Software's CoolViews (<http://www.quadratic.com/Cool/>), a shareware control panel that allows you to customize just about every-

thing else dealing with list views. For example, with CoolViews you can specify by global default which columns to display, as well as their width. You can enable bonus columns that display the type and creator codes of each file. And you can eliminate the white lines that separate rows, and even replace the two-tone gray background with a single color of your choice. The current version of CoolViews doesn't do what you want, but it offers so many other useful features that everyone running Mac OS 8 should install this puppy, pronto.



COOLVIEWS CAN'T REORDER COLUMNS, but it can fiddle with just about every other list-view setting.

Q On a recent visit to a local computer store when I was looking for ink cartridges for my Color StyleWriter 1500, I noticed that the store no longer carries any Apple-brand cartridges. The clerk assured me that Canon cartridges are an acceptable substitute, but he didn't know which cartridges were compatible. Can you shed some light on this situation?

A Apple doesn't like to promote the fact, but the guts of many of its peripherals are actually produced by other manufacturers and then wrapped in swell Cupertino packages (for a fascinating look inside Apple's Industrial Design Group, check out Paul Kunkel and Rick English's book *AppleDesign: The Work of the Apple Industrial Design Group*, Graphis, 1997). Most of Apple's ink-jet printers are Macintized versions of models from Canon and Hewlett-Packard and as such can use the same consumables as these other models. For instance, your Color StyleWriter 1500 accepts Canon's BC-05 (color) and BC-02 (black) replacement cartridges. Other options to consider include generic or remanufactured cartridges, or even an ink-jet refill kit so you can reuse the same cartridge multiple times. I don't use an ink-jet printer, so I can't recommend any particular vendor, but searching the Internet for *ink-jet cartridge* turns up dozens of companies specializing in this field.

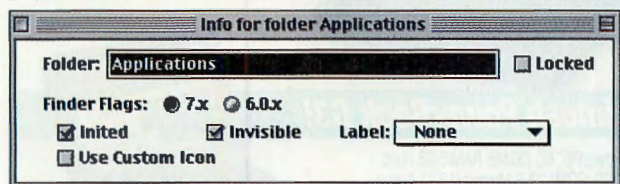
Q I was in the middle of a big Photoshop project when Photoshop presented an alert box saying, "Could not complete your request because the primary scratch disk is full." What does this mean and how do I fix it?

A When there's insufficient RAM to perform an operation, Adobe Photoshop (408-536-6000, <http://www.adobe.com>) uses its own kind of virtual memory, called a scratch disk. When images no longer fit into memory, they are automatically swapped in and out of this scratch disk in invisible files. Since scratch disks are much slower than real memory, it's best to allocate as much memory as possible to Photoshop so the program doesn't need to use the scratch disk at all. Sometimes that's not feasible, however, so you want to make sure your scratch disk is a fast drive with plenty of contiguous free space. To determine which drive is the current scratch disk, choose Plug-Ins & Scratch Disks from the Preferences submenu in the File menu. In the Scratch Disks section, two pop-up menus designate the Primary scratch disk and a Secondary disk, which is used only if the Primary fills up. If you have only one hard disk, you need to delete unnecessary files from that drive. If you have multiple drives, choose the fastest one with the most free space as your Primary scratch disk and designate a slower drive as the Secondary. Click OK, then quit and relaunch Photoshop for your changes to take effect.

Q One of my students somehow created an invisible folder, into which she put a bunch of programs. Using the Finder's Find command, I located the programs and dragged them out to the desktop; now how do I make the folder visible again?

A Before I answer your question, allow me to climb upon my soap-box, where the view is much better and my voice carries farther. Mac users everywhere, I beg of you, leave invisible files to the experts. If a programmer created an invisible file, it was for a good reason. You're not supposed to diddle with it, because you can royally screw things up. And don't create your own invisible files and folders, because they're too easy to lose track of, and there's really no legitimate need for them in the first place. Keep everything out in the open and your life will go more smoothly.

Now that you've indulged my rant time, let's get down to answering your question. Launch ResEdit (available from <http://www.shareware.com>), then choose Get File/Folder Info from the File menu. Locate the invisible folder and click Get Info. In the dialog box that appears, unmark the Invisible check box. Then quit ResEdit and save your changes. It may take the Finder a few seconds to update its display, but the folder soon reappears.



RESEDIT RIDES TO THE RESCUE when you need to make a hidden file or folder visible again.

Q Is it possible to copy files or applications larger than 1.4MB from my hard drive to multiple floppies?

A Absolutely! Race on over to Aladdin Systems (800-480-4011 or 408-761-6200, <http://www.aladdinsys.com>) and download Stuffit Lite, or find it on The Disc. This is a must-have shareware utility for Mac users. It compresses files into archives that are on average 60 percent smaller than the originals, saving disk space, speeding modem and network file transfers, and making backups easier. If a compressed file still doesn't fit onto a floppy, just use Stuffit Lite to make the archive self-extracting, then segment it into smaller parts that you can copy individually to multiple floppy disks. And with a simple double-click of the first segment, the archive automatically recombines and expands.

Q A few days ago at a computer store I saw a desktop Power Mac running Mac OS 8, with a Control Strip in the Finder. I thought the Control Strip was available only on PowerBooks. Can I get it on my desktop Mac?

A The Control Strip provides a handy method of changing certain settings without requiring you to open control panels. The Control Strip was originally for PowerBooks only, but that has changed. If you have Mac OS 7.6 or later, you can now install the Control Strip on any Macintosh by performing the custom installation below.

Owen W. Linzmayer (askus@macaddict.com, <http://www.netcom.com/~owenink>) is a San Francisco-based freelance writer and the author of *The Mac Bathroom Reader*. Please submit technical questions or helpful tips directly via email or c/o MacAddict, 150 North Hill Drive, Suite 40, Brisbane, CA 94005.

Control Your Strip

Mac OS 7.6: Insert the Mac OS 7.6 CD-ROM, double-click the Install Mac OS application, then perform steps 1 through 4. In the Software Installation window, deselect all the check boxes and click Customize. In the Custom Software Installation window, select only the Mac OS 7.6 check box and click Start. Click Continue at the Mac OS 7.6 welcome screen, then click Agree at the software license window. In the Install System Software window, choose Custom Install from the pop-up menu on the upper left. Scroll down to Control Panels and click the triangle to its left to expose the various options contained therein. Scroll down and select the Control Strip check box, then click Install. When the installer has finished, restart your Mac to begin using the Control Strip.

Mac OS 8: Insert the Mac OS 8 CD-ROM, double-click the Mac OS Install application, then click Continue at the welcome screen. Choose the appropriate volume from the Destination Disk pop-up

menu, then click Select. When the alert box appears informing you that this drive already has Mac OS 8 installed, click Add/Remove. In the Custom Installation and Removal window, select only the Mac OS 8 check box, then click Start. After the installer has checked the destination disk, click Continue at the Mac OS 8 welcome screen. In the Install System Software window, choose Custom Install from the pop-up menu on the upper left. Scroll down to Control Panels and click the triangle to its left to expose the various options contained therein. Scroll down and select the Control Strip check box, then click Install. When the installer has finished, restart your Mac to begin using the Control Strip.

After installation, start by opening the Control Strip control panel. Make sure the Show Control Strip radio button is selected and the Font Setting is to your liking. Close the control panel and return to the Finder. Although the Control Strip floats above all open windows, you must be in the Finder to use it, so if it doesn't appear to be responding, return to the Finder by choosing Finder from the Application menu.

OPTION-DRAW THE SIZING TAB to reposition the strip.

DRAG THE SIZING TAB to enlarge the strip.

OPTION-DRAW A MODULE to change its order.

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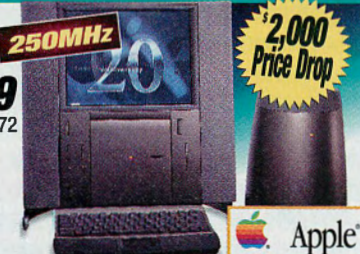
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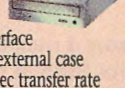
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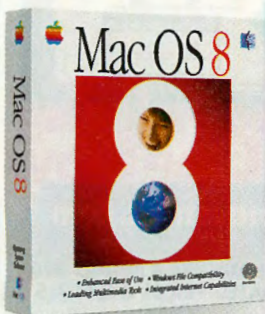


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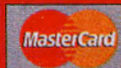
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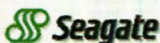
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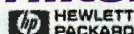
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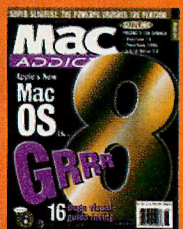
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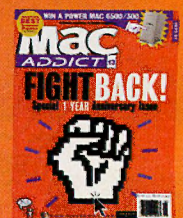
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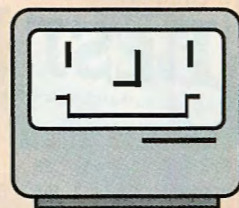
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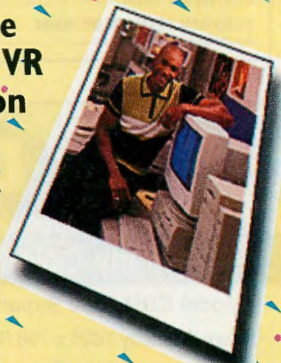
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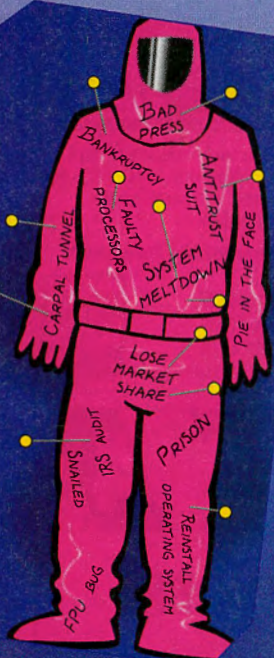


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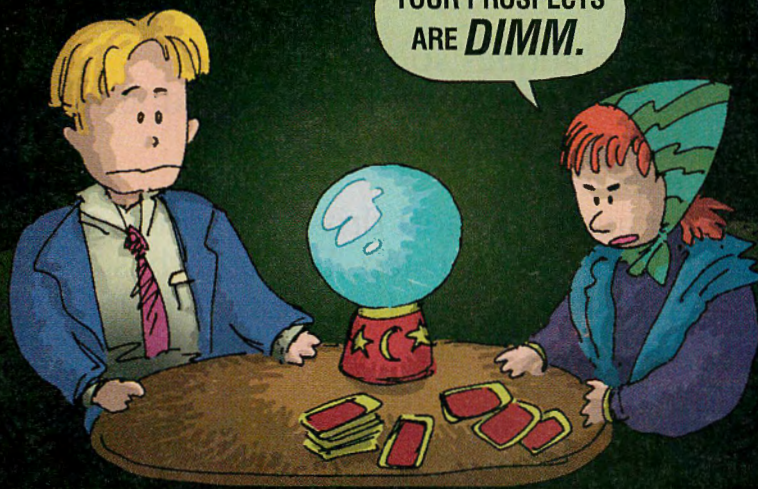
- ✓ Several Oracle secretaries have informed us that Larry Ellison's sword is actually much smaller than pictured in our MacAddict Collectible Larry Ellison Samurai Action Figure. We are sorry for the error.
- ✓ Last month on The Disc we featured the Mac OS 8.1 update when we really meant to showcase *Saturday Night Live*'s "Weekend Update" with Colin Quinn. We apologize for any inconvenience caused by this mix-up.
- ✓ In last month's feature article on the top 25 most influential people in the computer industry we forgot to mention Gilbert Amelio, Cheryl England, Theodore Kaczynski, Al Gore, Don Crabb, Roman Loyola, Fozzie Bear, Pieter Hartsook, Stephen Kahng, Noel Godin, and Frank Echler. Sorry.
- ✓ We've been trying to figure out a way to say bad things about pretentious and wealthy newsletter editor Esther Dyson for months but we can't seem to come up with the right joke. We apologize for the omission.
- ✓ For the past 22 months we've displayed our Web site in a garish mixture of purple and green that many readers have complained is too "gaudy" and "hard to read." We are not sorry. We changed our colors because we wanted to. So there.

Kai's PowerHair

Kai Krause, the long-locked cofounder of MetaCreations, is almost as famous for his flowing seventies-style hair as he is for his image-altering graphics plug-ins. Balding beauties clamoring for the same heady success will be relieved when Kai finally releases Kai's PowerHair Xtensions—already celebrity tested and approved by such mane-ly men as Michael Bolton, the Nelson twins, and Fabio.



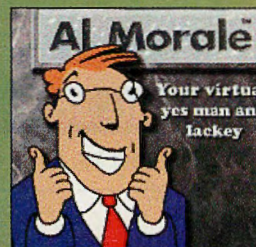
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